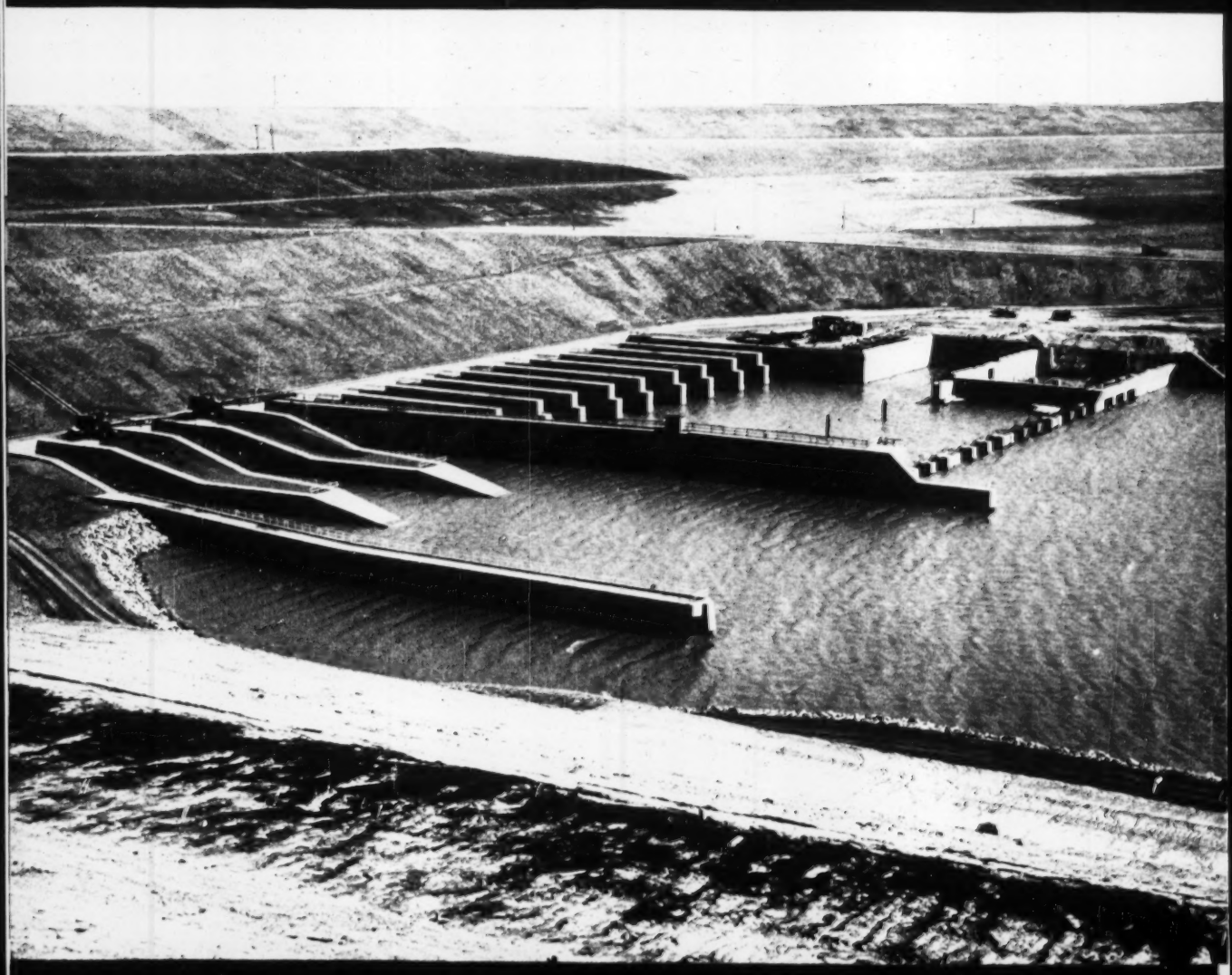
ENGINEERING NEWS-RECORD



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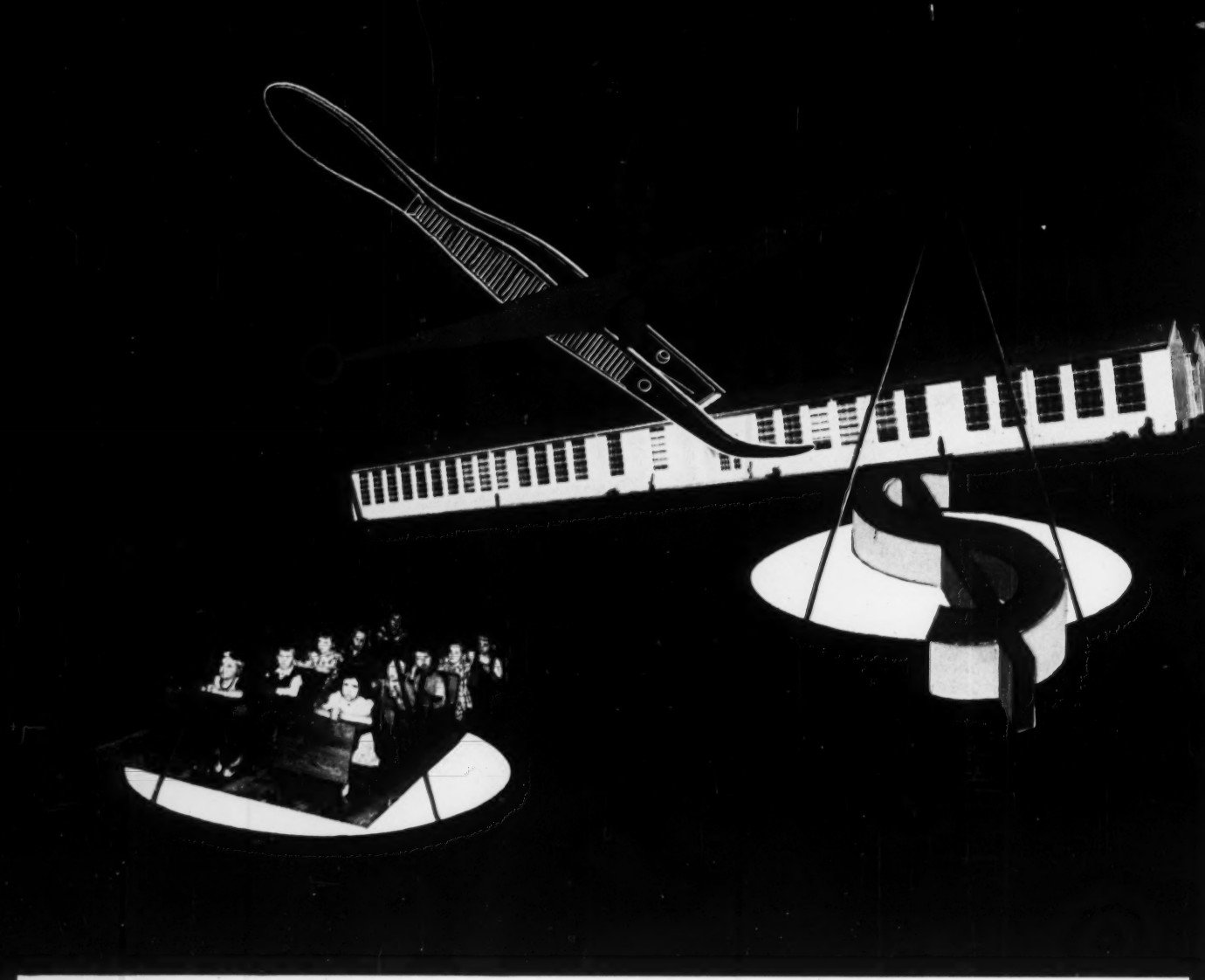

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Building ideas have also changed in industry and on the farm. With the revolutionary STEELOX method the jointed panels provide both structural support and a finished surface. For sidewalls they save framing and outside covering. On the roof, STEELOX panels replace rafters, sheathing and roofing. Erection is simplified, appearance improved, and weathertight construction assured. Unskilled workmen quickly erect a low-cost, maintenance-free structure that is permanent yet has high salvage value.

Making products simpler, easier to handle and more efficient has been a prime goal at Armco for more than 40 years. So has the designing of products to meet specific needs.

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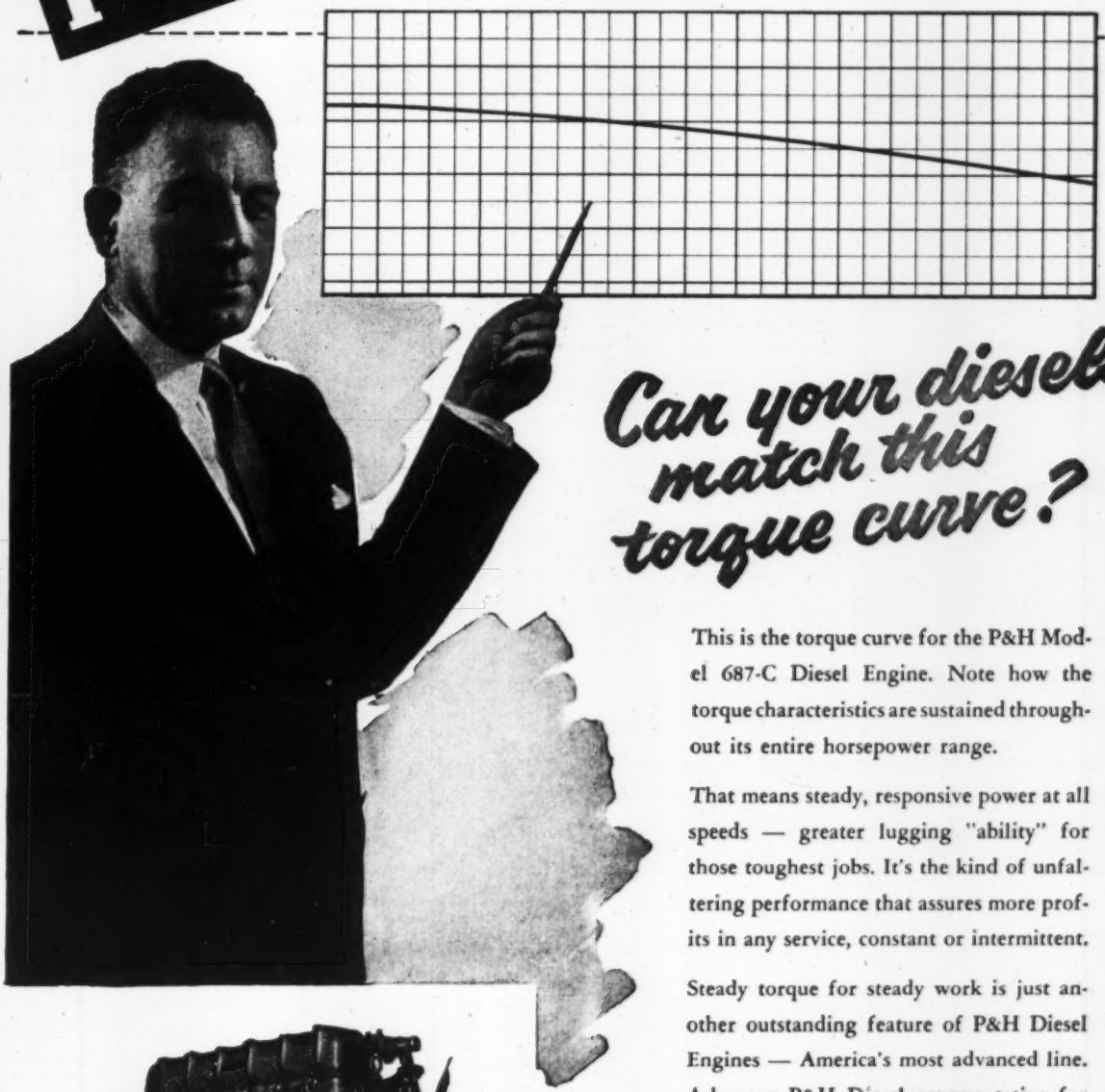
P&H Diesel Engines

(2-CYCLE)



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P&H Diesel Engines are built in 1, 2, 3, 4 and 6-cylinder models — up to 145 h.p.

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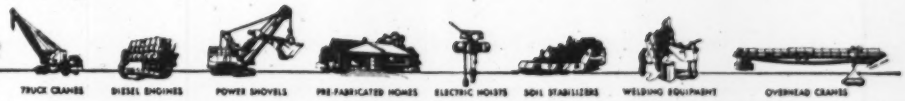

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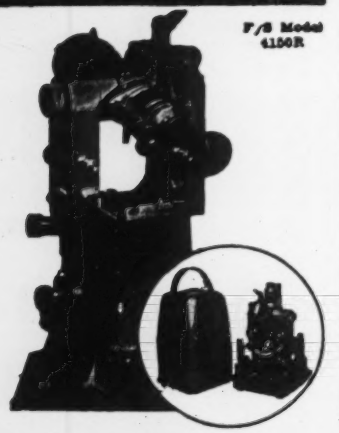

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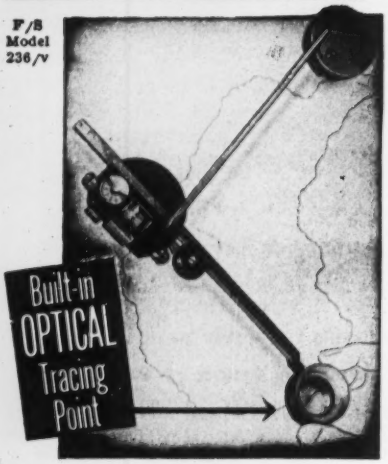

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Number of copies of this issue printed: 58,235

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Robert F. Boger
Publisher

June 18, 1953 ENGINEERING NEWS-RECORD Vol. 150, No. 25

Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y.**

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Engineering News-Record — Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. Position and company connection must be indicated on subscription orders.

Single copies 35¢. Subscription rates — United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada, $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere countries, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries, $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879. Printed in U. S. A.

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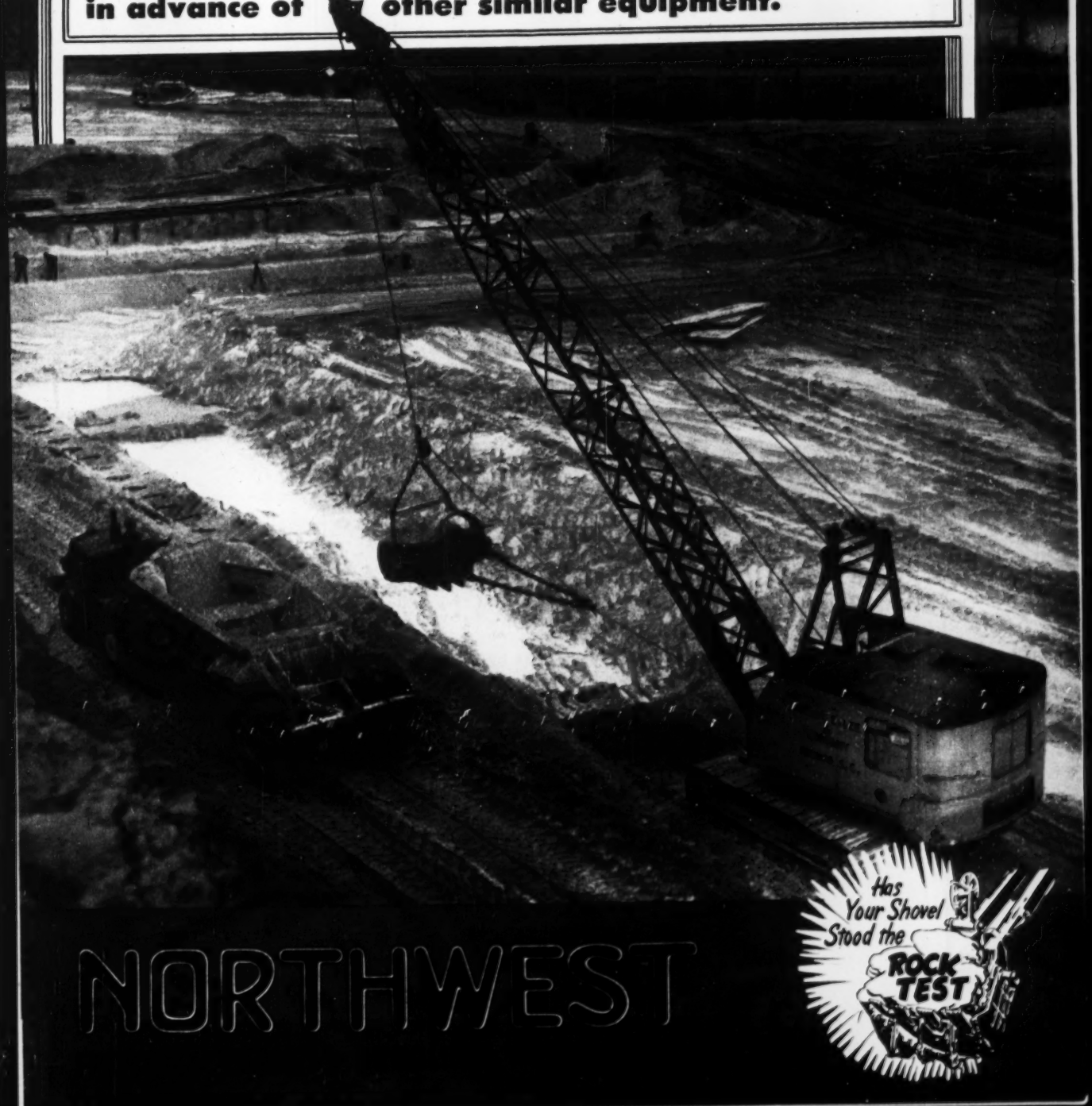

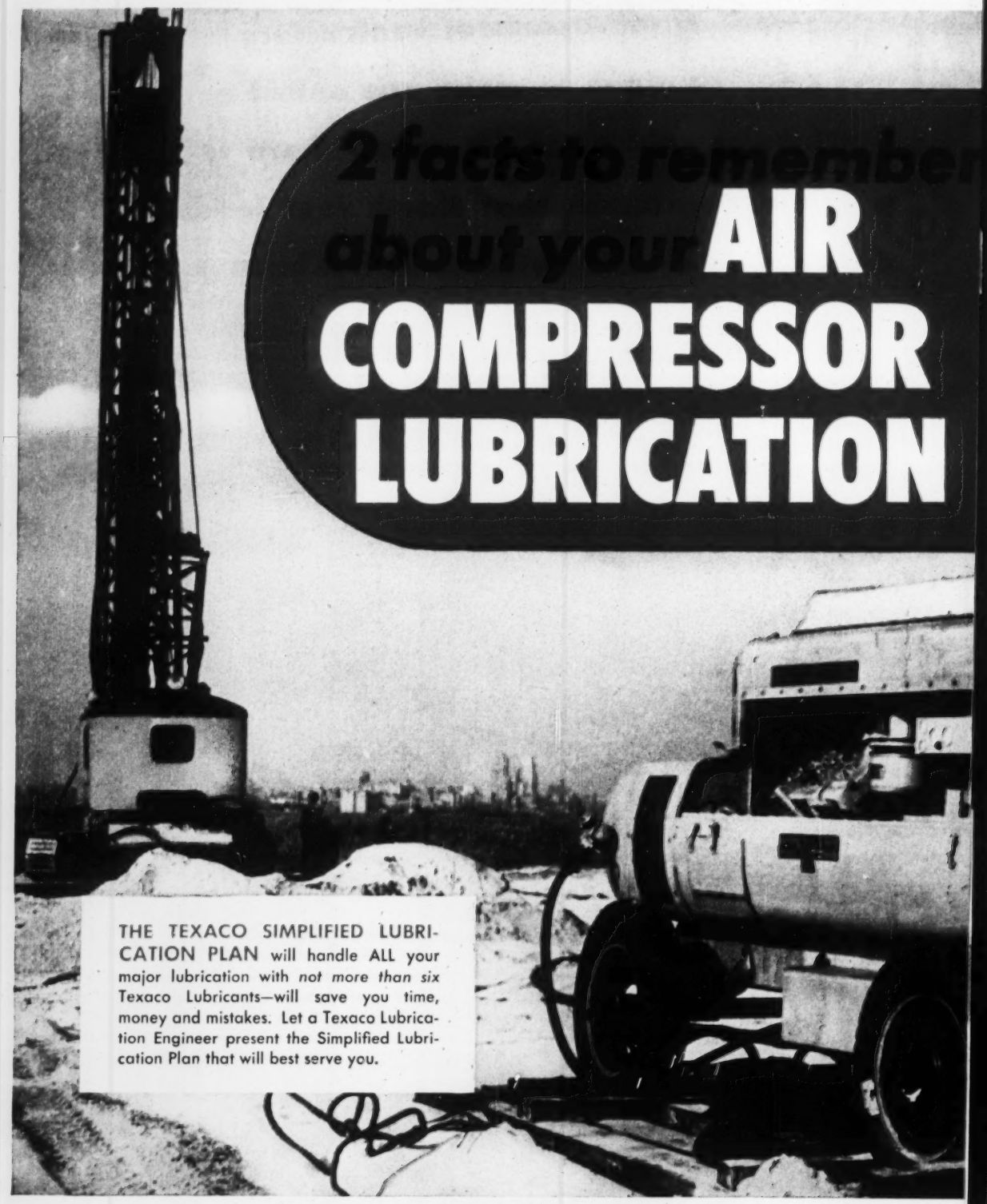
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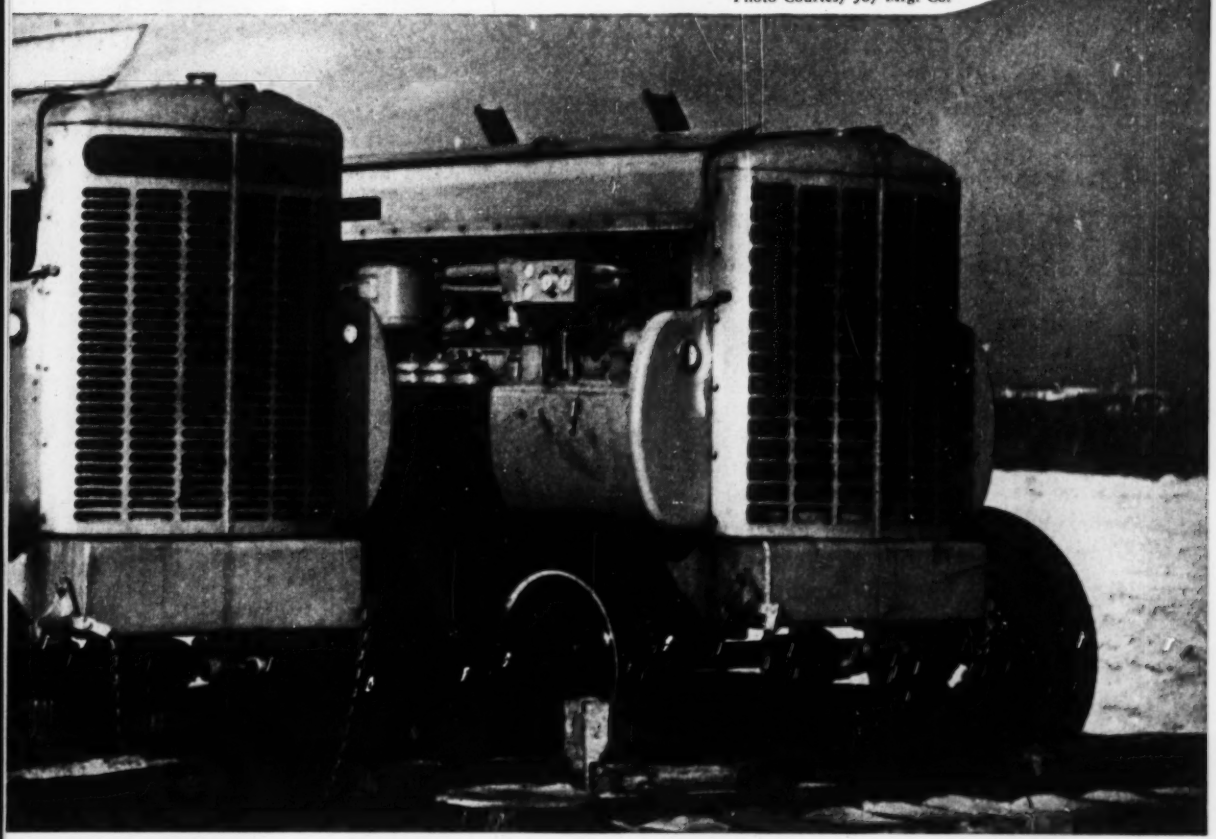
Photo Courtesy Joy Mfg. Co.



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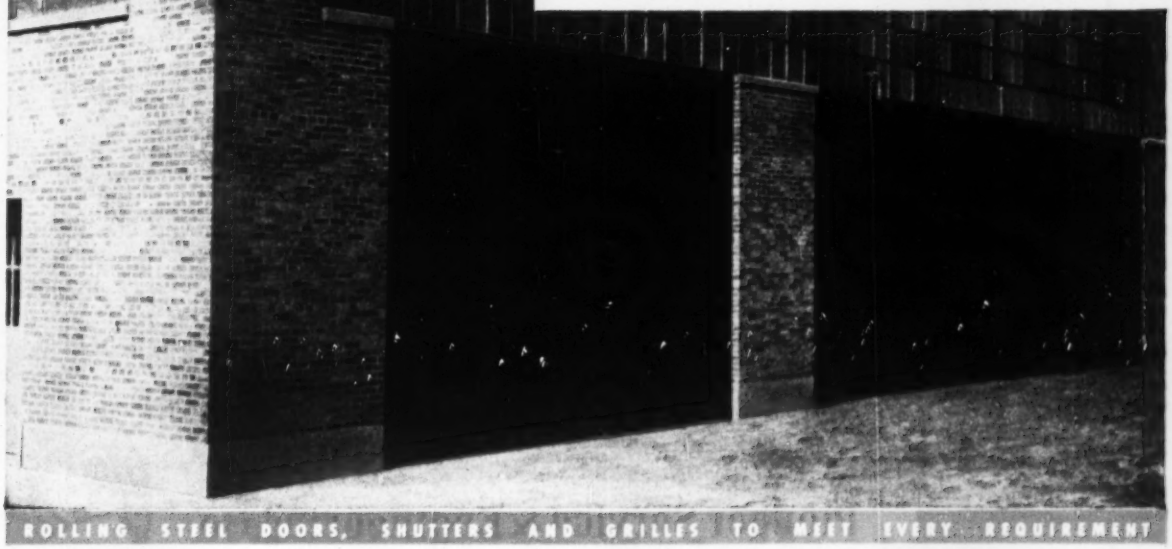

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Three of fifteen Mahon Rolling Steel Doors installed in a large midwest foundry. Spence Brothers, Saginaw, Mich., Gen'l Contractors.

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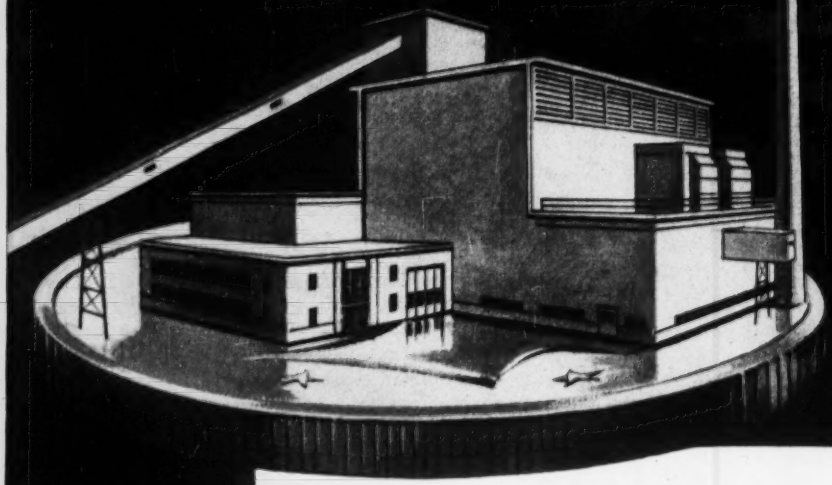

Today more than ever prudence requires that a sizable fixed investment such as a power facility be carefully integrated with the corporation's financial structure and founded on an accurate anticipation of the company's load, possible sources of power and future economic trends.

Such forehandedness is an integral part of Pioneer's power plant design work, for Pioneer is not only a consulting and design engineering group but an organization of financial and economic specialists as well, and the two points of view guide and temper one another.

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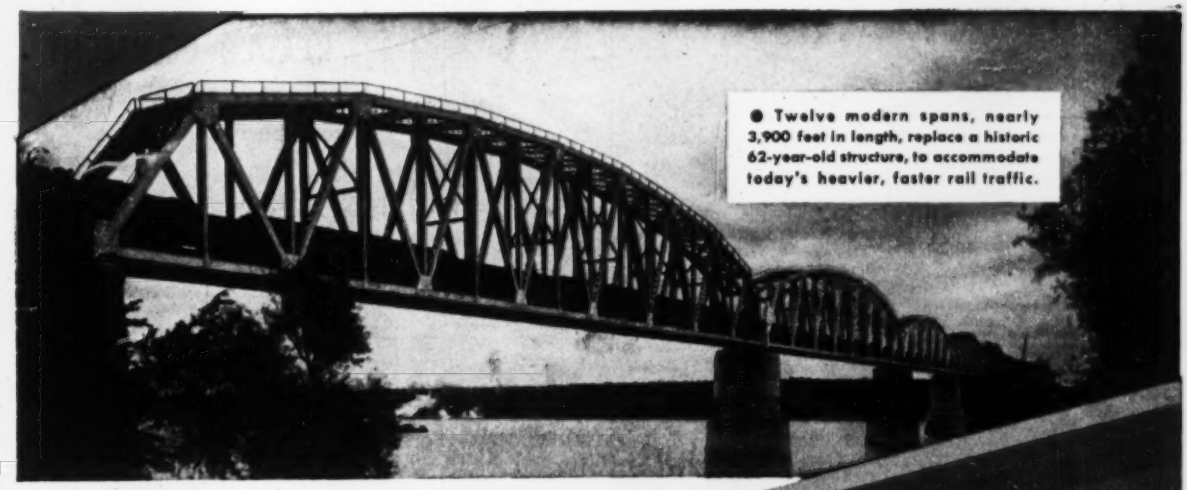

● Twelve modern spans, nearly 3,900 feet in length, replace a historic 62-year-old structure, to accommodate today's heavier, faster rail traffic.

Illinois Central's $6,500,000 Bridge at Cairo, Ill., is Protected by

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● **During most of this period,** Pittsburgh's new X-L-O Structural Steel Primer, used as an initial protective undercoating, helped to safeguard these new steel spans against corrosion. This new kind of protective coating is derived from special linseed oil, combined with red lead and iron oxide pigments. It is also furnished with 100% red lead, if desired. A variety of IRONHIDE coatings, suitable for field application, is also available.

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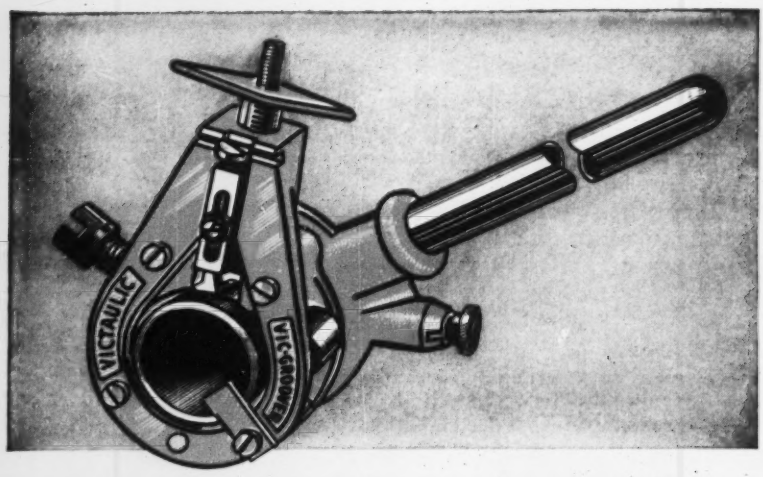

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READER COMMENT

Needs parentheses

SIR: In your May 21, 1953, issue of ENGINEERING NEWS-RECORD, you published on page 104 under heading of "Novel Cost Basis for Water Pipe Line" a formula for evaluation of bids as follows:

Cost in cents per thousand gallons

$$\frac{P(R + C) + O \times 100}{Q}$$

This should have read:

$$\frac{(P(R + C) + O) \times 100}{Q}$$

This formula was devised for a special condition that existed in the distribution system for the City of Vallejo, and would not necessarily apply to any other project having different conditions.

H. L. THACKWELL
Hydraulic and Sanitary Engineer
Kaiser Engineers
Division of Henry J. Kaiser Co.

Way to ease house shortage

SIR: Your editorial, "The real key to housing," (ENR March 19, p. 128) is worth commenting on.

The argument for building higher priced homes, which, when they become old, can be passed on to the lower income group, held sway for some years. But it was successful only from the brokers' standpoint.

The rate at which housing can be provided for the next lower income group is a direct function of the rate of obsolescence and depreciation of new homes. The greater the demand for housing for the lower income group, the faster does this depreciation take place, brought about by premature subdivision and new developments.

There are many angles to the house-building industry. Here is one: In St. Paul, there is a carpenter-builder who builds two five-room houses a year on adjoining lots, or at least in the same neighborhood as this lessens lost time and excess motions. He has the money to build two houses—pays cash for materials and labor, and thus is relieved of all financing charges. He is skilled in house building, but he hires union labor for lathing, plastering, plumbing and electrical wiring. He charges his own labor at union rates. His houses are good. He sells his houses for cash, and then proceeds to build two more houses.

He is self-employed, making a good living, and is a respected citizen, help-

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spanning the South Channel Sweetwater River between National City and Chula Vista, California is this 332-foot long highway bridge supported by Raymond piles. It has a 28-foot wide roadway and is of reinforced concrete construction with concrete caps resting directly on the Raymond piles—another example of the important role Raymond is playing in the constant development of the highways of America.

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Branch Offices in the Principal Cities of United States and Central and South America.

ing in a small way to relieve the house shortage. Here is a field for carpenters with some money. If there were enough of these builders, they would be making a real contribution to housing needs.

G. H. HERROLD
St. Paul, Minn.

TVA design report

SIR: In the book column on page 79 of your May 21 issue you carried a review of TVA's most recent technical report, "Civil and Structural Design," Report No. 24, Col. 1, and we want to thank you for it.

In publishing the report, the Government Printing Office, in error, stated that the volume was available from the Superintendent of Documents, Washington, and your review justifiably included that statement. The report is on sale *only* (for $2.00) at the office of the TVA Treasurer, Knoxville, Tenn., along with most other TVA technical reports. A number of orders for the book are going to Washington as a result of your review, and it is necessary that they then be forwarded to TVA from there causing some delay. We are hoping that you will find it possible to mention in your book column that orders should be sent to the TVA Treasurer instead of the Superintendent of Documents.

PAUL L. EVANS
Director of Information
Tennessee Valley Authority

Electro-osmosis needed?

SIR: We have read with interest your article on stabilizing wet soil encountered in the excavation for the John C. Weadock Generating Plant near Bay City, Mich. (ENR April 30, p. 36), and we should like to point out a few pertinent and interesting facts about the subject of electro-osmosis.

Electro osmosis was originally tested in this hemisphere in Canada by the Hydro-Electric Power Commission of Ontario in June and July of 1949. Utilizing our wellpoint system, the commission employed electro-osmosis in the stabilization of footings for two high-tension towers. The conclusion reached by the commission was that electro-osmosis was slow and expensive, although it was effective in solidifying the true silt that existed under the towers.

At the Massachusetts Institute of Technology's Soil Stabilization Conference in June, 1952, Dr. Leo Casagrande gave the range of grain size distribution of the so-called "silt" at the Weadock Generating Plant. From

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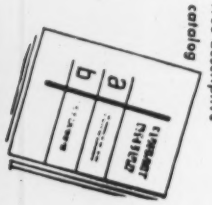

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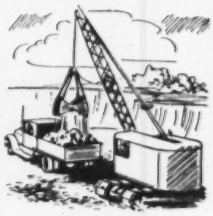

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READER COMMENT

his figures, we believe that the "silt" encountered at Weadock (according to U. S. Bureau of Soils Classification) more accurately should be classified as fine to very fine sand to coarse silt.

It is interesting to note that our wellpoint system has been used successfully to dewater much finer grain soils than that encountered at Weadock. For example: Ore pile stabilization at Warren, Ohio, for Republic Steel Corp.; Elizabeth River Tunnel, Norfolk-Portsmouth, Va.; and Phoenix Insurance Co. Bldg., Hartford, Conn. described in ENGINEERING NEWS-RECORD, Dec. 28, 1950, p. 24.

It is our opinion that electro-osmosis has a practical application in stabilizing extremely fine silts and clays, but that it is unnecessary in fine sand such as found at Weadock. We believe this is substantiated by the writings of such authorities on soil mechanics as Dr. Karl Terzaghi, Dr. Ralph Peck, and Dr. Gregory P. Tschebotarioff.

Our experience in the soil stabilization field impels us to emphasize that wellpoints, properly utilized, are quite capable of predraining very fine soils by the vacuum method without the aid of expensive electro-osmosis.

BYRON J. PUGH,
Ass't Chief Engineer
Moretrench Corp.
Rockaway, N. J.

CALENDAR

Conference on road and street traffic control, Purdue University, Lafayette, Ind., June 22-24.

American Society for Engineering Education, annual meeting, University of Florida, Gainesville, June 22-26.

Conference on modern highways, Massachusetts Institute of Technology, Cambridge, Mass., June 23-25.

Engineering conference, Federal Civil Defense Administration, Region 2, National Civil Defense Training Center, Olney, Md., June 25-26.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., June 28-July 3.

Summer program in Advanced Strength of Materials, M.I.T., Cambridge, Mass., July 6-17.

City and regional planning programs, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 21-Sept. 4.

Joint meeting International Association for Hydraulic Research and Hydraulics Division of the American Society of Civil Engineers, University of Minnesota, Minneapolis, Sept. 1-4.

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New standards of efficiency and ingenuity were required on the part of the contractors to construct this new and larger pier on the site of old Pier 57.

They licked many a tough problem, and the story of this job, as published in leading construction journals, is well worth reading. However, they didn't have fuel or lubricant problems, because they selected the petroleum products identified by the familiar Orange Disc.

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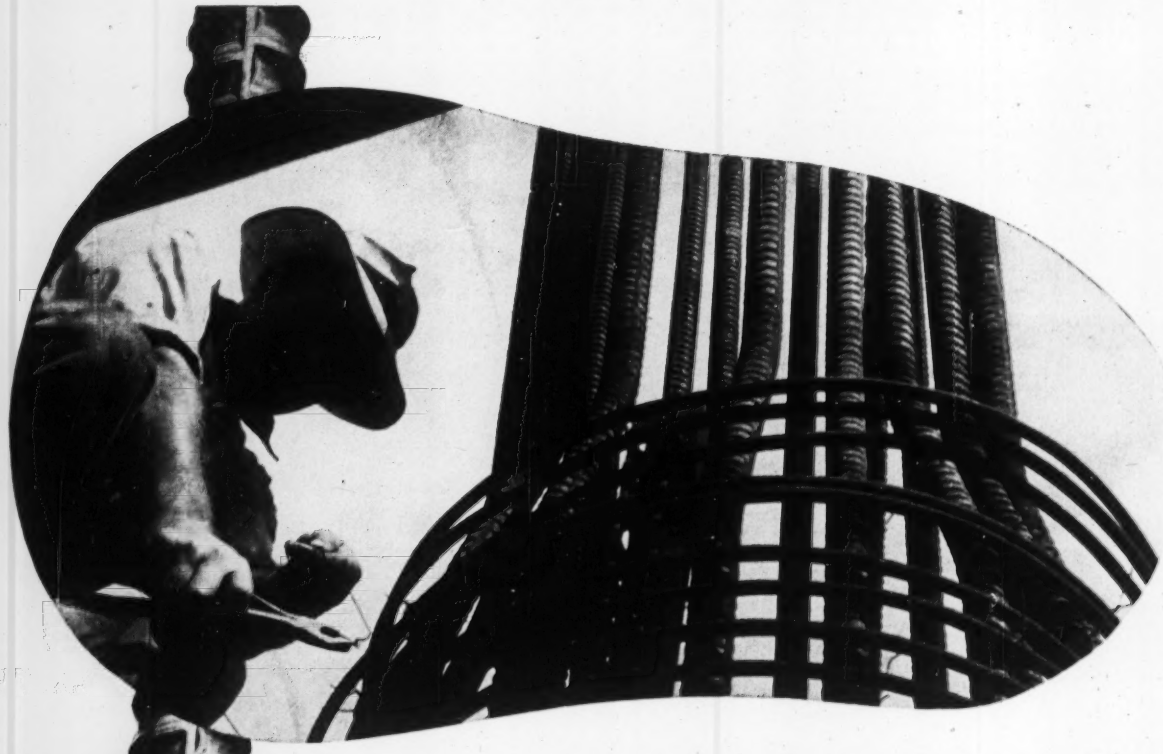

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- **Certain sure**—California's legislators decided to copper-rivet their control of waters within the state—notwithstanding a policy declaration by Interior Secretary McKay that federal agencies must respect local laws.

  The legislature voted to place before the voters a state constitution amendment (in November, 1954) providing that whenever any agency of government—including federal—acquires an interest in real property in the state, it must agree to abide by California water laws.

  The decision was an outgrowth of the long and involved legal battle over rights to the waters of the Santa Margarita River (ENR April 23, p. 17) where the U. S. Navy claimed prior water rights for its huge Camp Pendleton.

- **No interference**—And Washington State water interests weren't through with their dispute with the federal government over water, either.

  The squabble has been between the Grant County Public Utility District at Ephrata and the Corps of Engineers over construction of dams at Priest Rapids on the Columbia River. Army men want to build a multi-purpose high dam at Priest Rapids—the PUD had similar plans, then modified them in favor of two low dams, one at Priest Rapids, one downstream.

  In a report to the PUD, Harza Engineering Co., Chicago, said last week that the two dams could be built without sacrificing flood-control benefits. Harza's solution: The two low dams can be built for power, with provisions for future addition of flood control and navigation facilities—at federal government expense.

- **Housing picture**—It's too early to draw any conclusions, but it's worth watching the housing situation. For May, the Bureau of Labor Statistics reports 107,000 starts—and that's 3% under the 110,000 started in April, 2% under May a year ago.

  Significant factors: An unexpected dip in private housing starts (which usually pick up in May)—down 2% from April for the first time this year that private starts haven't shown a gain over the previous month. Public housing starts were 2,800 for May—lowest so far this year.

  But don't move to a decision too fast. Despite the drop in May, total starts for the first five months of '53 stand at 465,300—slightly higher than in the same period of '52.

- **Business still looks good**—Despite gloomier forecasts of some experts, U. S. businessmen apparently aren't too much worried about the immediate future.

  According to the Securities and Exchange Commission and the Department of Commerce, businessmen plan to spend $20.5 billion in the next nine months for plant alone.

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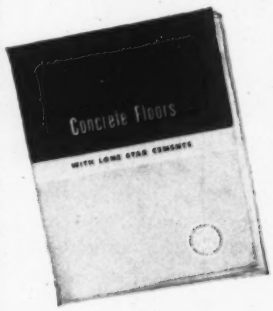

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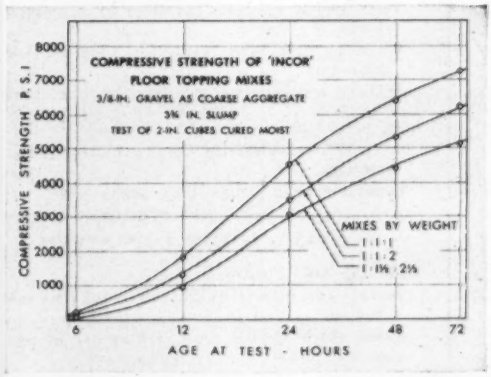

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Washington experts play up the benefits of easing FHA terms next year instead of this year—although this is partly wishful thinking. Almost all government officials believe the loosening of FHA limits will have no trouble next session of Congress.

But there is considerable private doubt about the timing. Most officials are unanimous that this year will see a million housing starts, without the benefit of broader FHA insurance terms (see p. 17 for data on starts to date). But they do believe that the new terms should be made effective quickly when Congress convenes in January.

Unless they are available by, say, March they would not have their full effect on 1954 housing construction.

•

Housing chief Albert Cole has other legislation to propose next year, but chances are it will be taken up separately—so as not to complicate the approval of the FHA liberalization.

Re-organization of the housing agencies is one item. Early odds seem to favor a modification of the present setup—a single group of housing activities all reporting through one chief to the President.

Another possibility is change in FNMA to meet some of the objections of the mortgage bankers, but this would face a big fight in Congress. Builders are solid against choking off Fannie Mae money.

•

Here's an updating on construction appropriations:

The Senate is restoring some of the construction funds cut out of appropriation bills by the House, but the amounts put back are not enough to reverse the economy drive of the Eisenhower Administration.

Interior Department got an additional $50 million from the Senate, up from the $406.1 million voted by the House. Alaska's Eklutna projects got $8.5 million in appropriations, along with an Interior Committee approval of an authorization for that amount. This probably will break the snarl, permit Eklutna construction to continue through 1954.

Agriculture got more money from the Senate for rural electrification and for forest roads. REA was upped $32.5 million to $247.5 million; forest roads was raised $2.5 million to $16 million total.

•

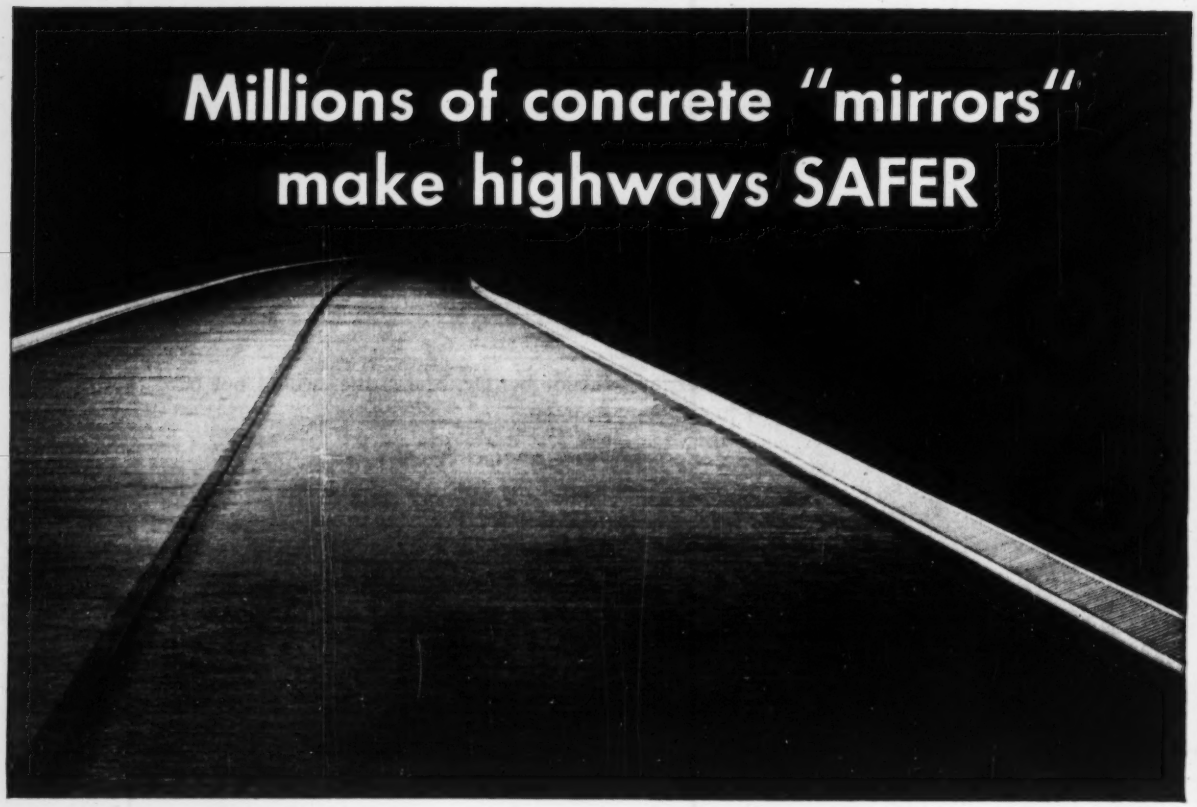
House voted what Eisenhower asked for AEC, TVA and VA. AEC's $166 million of new money is backed by $533 million of carryover funds. VA's new money for hospitals—$70 million—is $20 million more than VA had in fiscal 1953. TVA's $160.5 million would slow down the building of the 34 power units now under way, and allow two new starts at Kingston and John Sevier, and funds for a steam plant near Memphis were denied.

•

White House suggestions on Taft-Hartley revision do not indicate there will be legislation this year. White House counsel Bernard M. Shanley finally broke deadlock between Labor Secretary Durkin and Commerce Secretary Weeks on amendments Eisenhower should recommend to Congress.

Building trades may get more than was contained in last year's bill—a recommendation to permit contracts requiring workers to join union only one day after they are hired, instead of seven.

Building trades are still working behind the scenes to get a construction industry amendment yet this session—despite the 100-to-1 odds against them.



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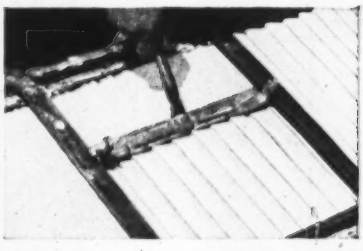

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ENR Cb-75RB

Worcester tornado deals heavy damage to all but rigid frame construction

Wreckage yields clues to methods of mitigating losses from future disasters—Ohio and Michigan hard hit

Frederick S. Merritt
Associate Editor

The tornado that struck Massachusetts June 9 appears to have bounced like a monstrous rubber ball among the low hills around Worcester. Along a curved 25-mile path, about ¼ to ½ mile wide, it devastated city and countryside wherever it touched down.

Earlier tornadoes struck in Ohio and Michigan (for details see pages 22 and 23).

Buildings and trees look as if they had been blasted by bombs except there are no craters and there were few fires.

Only the wildest guesses are offered by local engineers as to the velocity of the winds or the forces exerted. No instrument readings are available. But some minimum values can be estimated for the pressure on the basis of observed damage. Cars were picked up and tossed around like bits of paper. Steel deck welded to steel beams was torn loose. Masonry walls 12 in. thick were blown out. Wood frame and bearing-wall masonry houses were flattened.

• **Some lessons learned**—The upper limit for the pressures, however, is more difficult to set. The forces seem to have been irresistible: "Anything that was struck went," says Edward T. McCann, senior building inspector, Worcester Bureau of Buildings.

My observations indicate that he is right. The tornado hit a wide variety of residential and industrial construction and none escaped severe damage.

Nevertheless, some types of construction resisted collapse; some appear less likely than others to injure or kill occupants. There are some clues in this disaster as to what might be done to minimize losses in future storms or even from bomb blasts. But this does not mean that the heavy damage caused by this tornado could have been prevented. The consensus of engineers and architects who have examined the wreckage is that it would not be economical to design for such forces.

• **Structural damage compared**—"You can't compete with the forces of Nature," says Albert G. Nault, architect, O. E. Nault & Sons, who has been engaged to plan the reconstruction of the devastated College of the Assumption in North Worcester. This structure consists of several wings built during the years since 1904, the latest in 1946. The older portions of load-bearing brick wall construction, with wood-frame floors and partitions suffered severe damage. About 4 stories of the top of 8-story high towers, and 2 stories of 4-story high wings dropped in.

Less damage was suffered by the newer wings, a gymnasium and chapel wing, and student-dormitory and classroom wing. These are enclosed with 12-in.-thick load-bearing brick walls, which support concrete-encased structural steel beams, concrete floors and poured gypsum roof. Windows were destroyed; the roof deck was blown in; suspended ceilings were torn loose; partitions were toppled. But the steel frame and the outer walls appear to be undamaged. These wings, however, are at one end of the building that might not have borne the full fury of the winds. An estimated $3-million damage was done to this structure.

It is interesting to note that steel-stud partitions twisted and bent about a horizontal axis; whereas, wood partions, in general weathered the blasts with little or no permanent deformation. Where temporary partitions were used, they generally toppled over. They had been merely nailed in place. Mr. Nault points out that partitions held by toggle bolts remained standing.

• **Effects on modern factory**—Frank J. Burgoyne, chief construction engineer of the Norton Company, also says it's impossible to design for anything like this. His company's one-year-old plant in North Worcester suffered about $1 million in damages. Yet, probably it had the most substantial construction of any of those hit by the tornado.

A one-story 740x300-ft factory section, with 20x60-ft bays, had a heavy structural steel frame, with continuous welded girders. This rigid frame came through unscathed. But the light-gage steel roof deck, which had been welded to the frame, roof insulation board, built-up roofing and asbestos-cement siding were scattered over the landscape. Some of the insulation was reported to have ended up in Wellesley, 25 mi to the east.

In the 360x100-ft office and drafting section at one end of the factory, glass block walls were partly blown in. But the cafeteria, of lighter steel

CAMERA REPORTS
on Worcester big wind

BAD WING—Oldest portion of College of Assumption had load-bearing brick walls, wood frames, which were badly damaged.

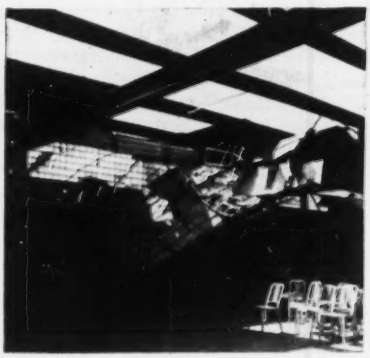
ENR photos by Compton

GOOD WING—New portion (gymnasium and chapel wing) of school lost windows and roof, but structure stood against storm.

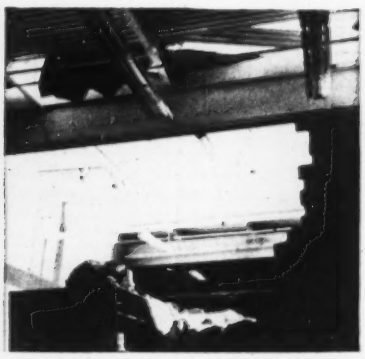
NOT SUSPENDED—Suspended ceiling in a dormitory at the college caught in varying pressures, wound up on the floor.

OPENWORK—Asbestos-cement siding and windows of new Norton Co. factory were ripped out quick and clean.

STEEL DECK of plant bent purlin as twister ripped its roof.



WHEN ROOF took flight, ceiling of plant cafeteria fell in.



INSIDE TOO—With roof and sidewalls gone, interior curtain walls went too.

construction, was severely damaged—steel purlins twisted and bent, roof blown off, windows destroyed, suspended ceilings torn loose.

A nearby plant of the Vellumoid Company of lighter steel construction, also was hard hit. Bays in those buildings are only about 15 ft square. The light frame of one buckled and collapsed, toppling its wood roof deck to the floor.

Willard Hedlund, superintendent of the Worcester Bureau of Buildings, is still another who believes that nothing could have prevented this catastrophe.

He called my attention to the Great Brook Valley project of 1,000 units, where houses with masonry bearing walls and hollow precast concrete floors, and houses of monolithic reinforced concrete construction both were badly damaged, the former suffering the worst. However, these did not fare nearly so badly as the wood-frame houses I saw, many of which were completely flattened.

Flint suburb suffers heavy loss of life

Worst of the tornadoes in Michigan hit Beecher Township, a new suburban residential development north of Flint. Houses, for the most part, were lower-priced, five and six-room frame and asbestos-sided structures.

The tornado cut a two-block wide, two-mile-long path through the housing development, leaving only the open basements of something like 270 residences. Basements did not afford the safest refuge in this area. A large percentage of the 112 fatalities occurred in the basements. The twister flung lumber into the cellars, where apparently it whirled around momentarily and then was sucked out and widely scattered as debris.

A relatively new brick high school building was the only structure of any size and strength in the tornado path. Its walls held firm but the roof was lifted off and destroyed.

Resistance impractical

The belief that universal design for tornado resistance is not economically practical was voiced this week by Joseph Orendorff, head of the research division of the Housing and Home Finance Agency, and Leonard G. Haeger of the National Association of Home Builders.

Tornadoes strike at unpredictable points and demolish strips of limited area, they pointed out. And, construction houses or buildings to resist the extreme forces involved would be very expensive.

(For special report by Small Homes Council see p. 24.)

A HEAVY CASUALTY LIST resulted from the tornado which cut a two-block wide, two-mile long path through Beecher Township, a Flint, Mich. suburban residential area.

Cleveland's loss is mostly residential

Residential structures accounted for most of Cleveland's estimated $50-million tornado damage. Heavier design and construction apparently was responsible for lighter damage downtown, where the twister made its exit from the city, according to John C. Wenrick, Cleveland Commissioner of Engineering and Construction.

The tornado struck first on the west side, demolishing about 100 homes. Moving on, it ripped into the Franklin Circle area, where damage to old structures, both mercantile and residential, was heaviest. It went into the Cuyahoga Valley, inflicting some industrial damage. Then, it swept across a downtown area.

Most of the damage was on the city's west side. New as well as old homes in the direct path of the twister fell apart. There also was heavy damage to homes from falling trees.

In one of the most heavily damaged old brick buildings, it was noted that trusses were not anchored to the brick walls. A large outdoor advertising sign on the roof of an old two-story brick apartment house apparently functioned as a sail, ripping the roof off as it went down.

Damage to 13 schools was about a half-million dollars. Worst hit was the 64-year-old two-story brick Gordon School, where the roof fell in, knocking down the second floor, too.

Destruction in the older neighborhoods on the near west side raised the possibility that the area might be used in Cleveland's urban redevelopment program. It is now being surveyed by the city's planning staff.

The city took action against so-called "gyp" contractors, who started soliciting business in the tornado area. Field offices, set up by the city to aid victims, were given a contractors' "blacklist" to show on request.

THIS WRECKAGE on Cleveland's west side, hardest hit of several sections where the tornado touched down in the metropolitan area, claimed two lives.

Residential contruction can be made resistant to tornado fringe effects

Small Homes Council report points out some weak spots for which corrective measures are possible

It is not economically feasible to build a house or any other structure to resist forces in the direct path of a tornado but it is possible and desirable to provide for resisting fringe effects.

These ideas were expressed this week in a special report prepared for ENR by the Small Homes Council. The report was authored by Rudard A. Jones, assistant director of the council and Willard J. Worth, research associate.

"If a house is designed according to present performance standards, its structure presumably will withstand an 80-mph wind without damage," the report declared. "The usual design load is 20 lb per sq ft wind velocity pressure. In contrast, the forces in tornadoes are much higher. The effects of tornadoes are due primarily to wind velocity and rapid changes in barometric pressure," the report pointed out.

"In general, these two effects cannot be separated. But, to gain some idea of the degree of severity of a storm of this type barometric observations may be used. For example: Three-inch drops in barometer pressure have been recorded. This sudden drop would be equivalent to a load of approximately 1½ lb per sq in. or 215 lb per sq ft, or nearly 10 times the usual design loads for building structures."

"The extent of this force may be visualized," wrote Jones and Worth, "when it is compared with certain reported but unconfirmed calculations for the pressures on the test house located 7,500 ft from the explosion of the atomic bomb. These pressures were estimated to be in the range of two lb per sq in."

The Small Homes Council report emphasized that it is possible to construct houses to resist the fringe effects. "Although present performance standards recommend that houses resist a force of 20 lb per sq ft wind velocity pressure, the average house may not measure up to these standards."

"Engineering studies on wood house framing systems conducted at the Small Homes Council indicate that the usual house has several weak points, chiefly in the connection of various parts. The connection of the frame wall to the foundation is usually weak. Where frame walls are not anchored to masonry foundations, there is danger of pulling masonry units loose from the wall. Where the anchorage is satisfactory, the bottom plate of the wall may remain on the foundation while the rest of the structure is ripped off. To correct this, the sheathing of the wall should extend over the bottom plate and be well nailed to it."

"Other weak points in the conventionally built house," the report continued, "are at the ridge and at the eave line. Thorough nailing or the addition of framing anchors or metal strapping are necessary to overcome the uplift forces of the wind. The minimum requirements for good construction are given in 'Technique of House Nailing' published by the Housing and Home Finance Agency."

"Another important point," declare Jones and Worth, "is to maintain continuity around the house. Top plates should be lapped and well nailed especially at all corners. Resistance to Racking is also important and this involves the use of the proper sheathing materials or diagonal bracing in the walls. Cross walls are also important in this problem. In more open plans without cross walls, the roof structure must be designed to transmit lateral pressures to the end walls. These precautions would reduce the susceptibility of houses to damage by strong winds. But, it must be re-emphasized that it is not economically feasible to design any building structure to resist tornadic violence."

New federal contract forms postponed

The General Services Administration has permitted the Defense Department to postpone until Dec. 1 its use of the new government construction contract forms originally scheduled to go into effect this week (ENR June 11, p. 25).

Meantime, prospects have brightened for revision of the disputes clause in government contracts. The Senate has passed the McCarran Bill giving contractors the right to appeal department decisions to the courts without having to charge fraud.

Taking together, these two actions aroused high hopes that government contractors would get a modified disputes clause this year. In the House, the Judiciary Committee is ready to approve the McCarran Bill as soon as its subcommittee can clear the measure, perhaps with slight changes.

At present, the subcommittee is tied up with hearings on other legislation. It plans to give government construction agencies a one-day hearing to protest some of the language in the McCarran Bill—particularly the part that gives the General Accounting Office, as well as the courts, the right to review contested decisions of department heads in contract disputes.

This delay is not expected to block enactment of the law by Congress before the present session ends. Legislators are confident that the McCarran Bill will go to the President for signing this year.

As for the new contract forms, the postponement granted the Defense Department seemed likely to be made general for all departments. At the week's end, Administrator Edmund F. Mansure of GSA was considering the necessity of allowing the same delay to all government construction agencies.

The Defense Department obtained its stay on a plea that the June 17 date would interfere with some operations manuals that the department now has in preparation.

City-owned parking facilities upheld

Contention of commercial parking operators that municipally operated parking facilities do not serve "a legitimate public interest" has been overruled by the Connecticut Supreme Court of Errors.

Ruling on a taxpayer's suit, the court upheld the constitutionality of the New Haven Parking Authority.

A municipally operated off-street parking facility serves public interest, the opinion held, because traffic strangulation can result in slumping real estate values and a decline in local tax income.

To allegations that city-operated parking facilities represent use of public funds for the benefit of store owners, the court replied that this is no more discriminatory than the outlay of public funds to pave a street.

The taxpayer's suit raised the point that any municipal-operated facility was a business threat to privately operated lots, especially since one planned for New Haven is to be open day and night. The court pointed out that the New Haven Parking Authority is not restricted to the operation of parking ramps during the day only.

Legal interpretation enables firms to get N.Y. State engineering licenses

Certificates permitting continued practice are granted corporations involved in long battle over registration law

Although their efforts to amend the New York State laws controlling licensing for the practice of engineering went down to defeat two months ago, five of the seven corporations involved in the amendment battle have received certificates permitting them to continue practice, it was learned this week.

The certificates—effective from Nov. 1, 1952, to Oct. 30, 1954—are renewable at expiration. They were awarded by the State Department of Education under an interpretation of the state law that makes it possible for a "foreign" corporation to practice under the law's "grandfather clause," if certain conditions are fulfilled.

The fact that the certificates—in effect legalizing the operations of engineers of the corporations involved—had been awarded became known as attorneys for the corporations were holding a series of meetings to determine what further action they might take in their attempts to insert changes in the state's education laws.

• **Battle lost**—Under provisions of the 1935 state law, (amended in 1952) corporations doing business as engineers, as well as individual engineers, are required to register biennially—under pain of being declared to be operating illegally.

What gave a serious aspect to this requirement (that corporations also must register) was a provision in the 18-year-old license law that the only corporations that could practice engineering in the state legally were those that (1) had been incorporated in New York State prior to passage of the law in 1935; (2) have been in continuous practice since then, and (3) have as a chief executive officer a person who is a licensed professional engineer.

These requirements appeared to many corporate engineering groups to be tantamount to putting them out of business in New York State. Their reaction (ENR March 12, p. 21) was to introduce legislation at Albany to amend the law to permit them to practice.

The battle was joined by the New York State Society of Professional Engineers, which opposed any change in the law, largely on the ground of lack of proper provision for responsibility for engineering actions. After a two-month battle before state legislature committees, the corporations—all of them with out-of-state charters—withdrew their amendment before it came up for final vote in the legislature.

• **But partly won?**—With their right to continue practice apparently having expired after Nov. 1, 1952 (the final date for registration) some of the corporations then applied for certificates from the Education Department.

And, as of this week, four had received certificates. They are: Chemical Construction Corp.; the Lummus Co.; Stone & Webster Engineering Corp.; Burns & Roe, Inc. A fifth—United Engineers & Constructors, Inc.—had applied for but had not yet received its certificate. Two others that were party to the legislative battle—the M. W. Kellogg Co. and Day & Zimmerman, Inc.—apparently had not yet applied.

The certificates were awarded, Education Department officials at Albany said, under an interpretation of the 1935 law which says that if a corporation, organized outside New York State, was doing business in the state legally on and before the date the 1935 law was passed—and has continued to operate—the state has no choice but to issue a certificate.

Newell Freeman, Secretary of the Education Department, said the department is "trying to be as flexible as possible in handling this matter."

"No end is accomplished by being punitive," Mr. Freeman said. "We have no wish to put anyone out of business. As long as we are satisfied that the corporations have complied with the law, we will issue certificates."

Department legal advisors added, however, that only corporations that can qualify under one of the interpretations mentioned will be issued certificates. Those formed outside the state after April, 1935—or in the state after that date—still are prohibited from offering engineering services.

$199 million in channel, levee work is proposed for Kansas River Basin

Detailed recommendations for a $199.3-million program of channel improvement and levees in the Kansas River Basin—representing an alternative to the federal government's big dam projects in the area—have been submitted to the State of Kansas by a board of three consultants.

A preliminary report, which aroused considerable controversy by counseling a halt to construction work at Tuttle Creek, Kirwin and Webster Dams, was made earlier in the year (ENR March 5, p. 21). The consultants, who were engaged by the state, are N. T. Veatch of Black & Veatch, Kansas City; Abel Wolman of Johns Hopkins University; and Louis Howson of Alvord, Burdick & Howson, Chicago.

The major share of the cost of the proposed flow-ways and levees would be spent to protect Kansas City, Kan., and Topeka, $134 million at the former and $49.7 million at the latter. Other large projects would include: Manhattan, $5.1 million; Lawrence, $3.1 million; Salina, $1.4 million; Beatrice, Neb., $1 million; Junction City, $817,000; Abilene, $708,000 and Marysville, $450,000.

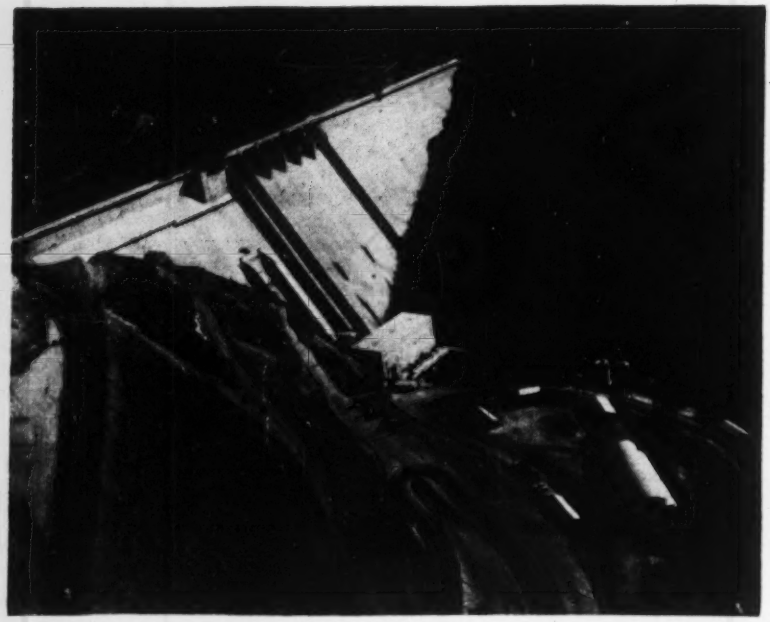
Within their less than $200-million cost estimate, the consultants provide for projects at 37 other urban sites.

"The required flow-way capacity," the report declares, "should be provided by widening the existing channel by setting back the levees and flood walls along one bank of the river only; preserving in so far as practicable, existing levees and flood walls along the opposite bank; by excavating the elevations above the standard low-water channel and the new levee lines; and by increasing to a minimum extent the heights of the existing levees and flood walls."

Recommendations call for eliminating "all major obstructions to flow at high-river stages." This would involve lengthening six railroad bridges at Kansas City and one at Topeka; relocating a railroad bridge at Topeka and one at Manhattan; replacing the Kansas Avenue bridge at Topeka; and lengthening five street bridges in Kansas City.

Army Engineer circles were critical of the preliminary report from several angles (ENR April 23, p. 26). They took exception to the consultants' claim that the federal program—involving 36 flood-control reservoirs and 21 local protection projects—would cost $1 billion. Total cost of the federal works, said Army Engineer critics, would be about $700 million; they challenged the price the consultants put on their alternate program as too low.

Nevertheless, the consultants firmly re-stated their preliminary findings in reference to the federal program and even offered to submit their alternate plans to an impartial board of review.



DETROIT DAM on Oregon's North Santiam River, a $70-million Army Engineer job, is key Willamette Basin project.

Ceremonies at Garrison, Detroit Dams underline new Administration policy

President speaks at $289-million Missouri River job; Interior Secretary dedicates Willamette Basin unit

Ceremonies at two multi-million-dollar Army Engineer dam projects last week provided occasions for re-emphasis of the new Republican Administration's contention that the states, local communities and industry as well as the federal government should participate in water resources development.

President Eisenhower spoke at ceremonies recognizing the final diversion of the Missouri River at Garrison Dam, a $289-million multi-purpose project 75 mi northwest of Bismarck, N. D. A key unit in the Missouri Basin flood control and water development program, the project was cited by the President as a proper federal undertaking. But, he added, the states, communities and industry also have an important role in developing such flood control and power projects, where possible.

Although Detroit Dam on Oregon's North Santiam River is an Army Engineer project, Interior Secretary Douglas McKay was asked to give the dedication address because of his long association with development of the Willamette Basin as mayor of nearby Salem, as state senator and finally as Governor of Oregon. He served as first chairman of the Willamette Basin Commission.

The Secretary termed the $70-million Detroit Dam "a symbol of the idea that there is room in the Columbia Basin for public and private power, just so long as the agreements we reach between them are worked out in such fashion as to bring forth the maximum benefits to all."

• Garrison Dam

Actual diversion operations at Garrison Dam, largest roll-fill earth embankment yet built, were carried out two months ago when engineers took advantage of an unusually docile Missouri River (ENR April 23, p. 27).

The dam stretches more than two miles across the river 77 mi north of Bismarck, N. D. Rising 210 feet above stream bed, the embankment contains 70,000,000 cu yd of earth, which is faced with 650,000 cu yd of riprap. To cut off seepage, 525,000 sq ft of steel sheet piling has been driven 85 ft.

The structure will contain 1,500,000 cu yd of concrete in its control works. A gated-chute spillway 1,400 ft long at the east abutment carries 29 tainter gates, each 29 x 40 ft.

Five concrete-lined 29-ft dia tunnels through the west abutment will serve a power plant with an ultimate output of 400,000 kw. For purposes of flood control, navigation and irrigation, water will be released through adjacent tunnels, two of 22-ft dia and one of 26 ft.

The dam will impound a reservoir 200 miles long and more than 14 miles wide at some points, with a maximum storage capacity of 23,000,000 acre-ft. This will allow for a flood storage of 4,250,000 acre-ft, which will stem the Missouri's annual March and June high water. Storage amounting to 13,850,000 acre-ft will be available for power, irrigation, navigation and other purposes. And, 4,900,000 acre-ft will represent dead storage.

Garrison Dam will constitute completion of one of the vital links in the ambitious Pick-Sloan Plan for control and development of the water resources of the Missouri Basin. Aside from flood protection it is expected to provide irrigation for the Dakotas, improve navigation on both the Missouri and Mississippi rivers during periods of low water and, it is hoped, stimulate industrial development by greatly increasing availability of power.

• Detroit Dam

Detroit Dam, though a multi-purpose structure, is primarily intended for flood control and is a key element of the Willamette Basin development.

The concrete-gravity structure is 454 ft high and 1,528 ft long. It impounds a reservoir 8.5 miles long, storing 455,000 acre-ft of water.

The North Santiam is a tributary of the Willamette, which is one of the chief tributaries of the Columbia River. The Willamette Basin program calls for 19 dams and reservoirs, of which Detroit is the fourth to be completed. The program already has produced considerable dividends in reduced flood damage in the area.

Placing the 1,345,000 cu yd of concrete was noteworthy because of the strict temperature limitations. The limit of 50° F for concrete necessitated cooling of all ingredients: sand, gravel, cement and water (ENR Dec. 21, 1950, p. 39 and Dec. 28, 1950, p. 31).

Although flood control is its prime objective, the dam's 100,000 kw of generating capacity will be particularly welcome in view of the power shortage in the Pacific Northwest. The dedication ceremonies were to have marked the start of the first 50,000-kw generator but trial runs burned out a bearing and initial power output was delayed. A second generator will be in service later this year.

Big Cliff Dam, a unit of the Detroit project, is nearing completion three

miles downstream. This concrete gravity structure, 191 ft high and 289 ft long, will regulate the fluctuating discharges of the Detroit power plant and water will be re-used to operate a power unit producing 18,000 kw.

The $70-million Detroit project of the Army Engineers was under the Portland district, with Cols. D. S. Burns and T. H. Lipscomb serving as district engineers during the construction. Major contract for dam construction of $28 million was held by Consolidated Builders, Inc., a joint venture of six contractors with Kaiser Engineers Inc., as principals and R. A. Hoffman as vice-president in charge of construction.

Double dam-dedication in Oklahoma

Two big dams in eastern Oklahoma —one of reinforced concrete and the other a rolled earth-fill embankment —were dedicated by the Corps of Engineers early this month. They are the $44-million Fort Gibson Dam on the lower Grand (Neosho) River about 10 miles northeast of Muskogee, and the $23-million Tenkiller Ferry Dam on the Illinois River about 20 miles southeast of that same city.

Both structures are located on tributaries of the Arkansas River and are important units in the comprehensive plan for flood control and hydropower development in that basin. Together they will provide for a total flood control storage of 1,522,000 acre-ft of water and an ultimate hydropower generating capacity of 101,500 kw.

• **Fort Gibson Dam**—The Fort Gibson Dam is of reinforced concrete, 2,850 ft long and 110 ft high above streambed. The dam itself was completed in 1950, together with the outlet works and intake structure for power facilities which will have an ultimate capacity of 67,500 kw. The entire project will be completed this summer.

Flow of water is controlled by thirty 40x35-ft tainter gates operated by individual electric-motored hoists. The outlet works contain ten 5-ft 8-in. by 7-ft sluice gates.

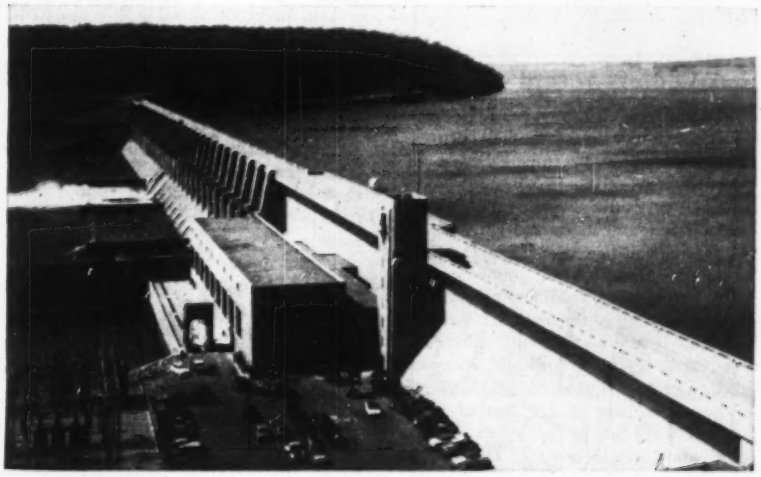
Fort Gibson Dam will store 365,000 acre-ft for power development, plus an additional 922,000 acre ft of floodwater. It will protect 3,000 acres of land in the Grand River Valley.

• **Tenkiller Ferry Dam**—The Tenkiller Ferry Dam is a 3,000-ft long rolled earth-fill embankment extending 197 ft above streambed. Flow of water from the reservoir—which will impound 630,000 acre-ft for power plus an additional 600,000 acre-ft for flood control—will be controlled by ten 50x25-ft tainter gates.

A 19-ft dia tunnel, 607-ft long, will release the floodwaters, while a tunnel of the same diameter but 22 ft longer will serve as a penstock in the power generating system. Power plant will have two 17,000-kw generating units.

Tenkiller Ferry Dam will provide flood protection for 3,100 acres of land downstream in the Illinois River Valley. The project is estimated to produce average annual benefits totaling $1,600,000, of which $756,000 is expected to accrue from the sale of hydropower.

Completion of these two projects will make ten operating reservoirs under the jurisdiction of the Tulsa District Corps of Engineers.



FORT GIBSON DAM—on the Grand (Neosho) River in eastern Oklahoma—shares double-dedication with nearby Tenkiller Ferry Dam.

Bid shopping

Legislation is approaching a showdown in Congress

Both the Senate and House Judiciary Committees were ready to vote this week on the so-called bid shopping bill (ENR April 23, p. 23). There was a good chance that one or both of the committees would report the bill.

In the Senate, seven of the nine sponsors of the Kilgore Bill (S. 24) are members of the fifteen-man Judiciary Committee. Approval of the measure by this body seemed assured.

On the House side, there was no stopping an identical bill in the Judiciary Subcommittee. Three of the five members had sponsored duplicate bills, but there was no equal assurance that the full committee of twenty-nine would approve the subcommittee's recommendation and send the bill to the floor.

No bets were being placed last weekend on the final outcome in either the Senate or the House. Members have been under a strong barrage of telegrams and letters from subcontractors—principally the electrical group—to support the measure. The volume of messages from general contractors has been much smaller.

But the outspoken opposition of government departments as well as general contractors is expected to have its effect if the bill comes up for a floor vote in either house. It looked last week as if the Kilgore Bill and its counterparts had little chance of enactment at this session.

Oregon group votes against NSPE tie

The Professional Engineers of Oregon have rejected affiliation with the National Society of Professional Engineers for the second time.

Action of the Oregon group was primarily the result of opposition of the New York Society of Professional Engineers, an NSPE affiliate, to a New York bill that would permit incorporation of Engineers Joint Council.

Leaders of the fight against Oregon affiliation contended the New York move was evidence of lack of unity in the engineering profession on a national level. Among those opposing national affiliation were J. C. Stevens, past president of ASCE; John W. Cunningham, past vice-president of ASCE; and H. Loren Thompson, president of ASCE's Oregon Section.

With a two-thirds affirmative vote required for affiliation, the result of a poll of 800 members was 217 against and 174 in favor.

Wide World photo

REP. CARROLL D. KEARNS, ex-Chicago contractor, proposes labor law revision.

New labor bill

Taft-Hartley amendment is proposed to protect professional groups

An amendment to the Taft-Hartley labor law along lines suggested by the National Society of Professional Engineers has been proposed by Rep. Carrol D. Kearns, member of the House Labor Committee and former Chicago building contractor.

Chapters in NSPE have management personnel as members. A chapter or other professional group acting as a union under those circumstances would be declared employer-dominated and ordered dissolved by the National Labor Relations Board. The Kearns bill (H.R. 5504) would prevent such a move. It also would give the protection NSPE seeks, by excluding from the definition of "labor organization" any group of professional personnel that has not been certified by NLRB or recognized by the employer as a collective bargaining agent.

Kearn's bill will be fought by the Engineers & Scientists of America because it would protect scientific, technical and professional groups in informally discussing wages, hours and working conditions with management.

The ESA, made up of unions of professional and technical employees, has asked Congress to amend the labor law in the opposite direction—by making it an unfair labor practice for an employer to discuss collective bargaining matters with the scientific organizations.

Strike picture

Strikes are continuing in Philadelphia, St. Louis, Wyoming and Delaware

Members of nine unions have accepted a 7½-cent wage increase offered by the Home Builders Association of Philadelphia. The carpenters, offered the same increase, turned it down; later the carpenters rejected a 10-cent-an-hour increase.

Work in home building and heavy construction was still at a standstill in Philadelphia—as it had been since May 1 when the carpenters walked off and kept the rest of the building trades out.

The strike has bogged down all types of construction in the Philadelphia area, involving projects valued at almost $1 billion.

The accepted home builders' offer was made to all unions whose members receive less than $3 per hour—15 such unions in all.

In spite of their original demands, it is believed by observers in Philadelphia that the carpenters would settle for a 15-cent straight wage rise.

The strike is expected to continue until the carpenters come to an agreement with the general building contractors and the home builders.

• **Wyoming**—The strike of 1,000 building tradesmen at Casper, Wyo., is holding up some $4.5 million in construction. The craftsmen are seeking wage raises of from 15 cents to 25 cents an hour.

Elsewhere in Wyoming, Cheyenne carpenters who struck June 1 returned to work upon gaining a raise of 15 cents an hour.

In Colorado Springs, Colo., plumbers ended a 55-day strike with a pay increase to $2.85 an hour—a 22½-cent increase.

• **St. Louis, Mo.**—Some AFL construction truck drivers returned to work last week following acceptance of a wage agreement with Associated General Contractors.

However, a continuing strike against four other employer groups still paralyzed both heavy and residential construction with an estimated value of $75 million.

The strike is keeping 27,000 AFL building tradesmen from their jobs. Also continuing their strike are some 700 AFL ironworkers.

An eight-cent-an-hour wage increase, with no escalator provision, has been approved by union and company representatives as settlement of the six-week-old building trades strike in Delaware.

The agreement, which calls for two-year contracts, was signed last week by representatives of the opposing sides.

The agreement must now be ratified by the member unions of the Building and Construction Trades Council and the companies represented by the Allied Construction Industries of Delaware.

The increase agreed upon by the negotiators is three cents higher than originally offered by the contractors, but the offer of an escalator clause which accompanied the five-cent offer was dropped.

The strike of about 5,000 construction workers in Delaware started May 1, halting public, private and industrial construction projects.

• **Other strikes**—An estimated 14,000 building trades workers were idle in Utah this week as a work stoppage that had every appearance of a long-drawn-out affair moved into its second week.

Construction strikes which have plagued Detroit area builders since May 1 continued this week as tempers flared and new groups of construction tradesmen walked off their jobs.

• **Correction**—**The 17-cent hourly wage boost for bricklayers in Detroit as shown by the table (ENR June 4, p. 30) should have been a 12-cent increase. There was no increase in the health and welfare fund.**

Safety record set

A near-perfect safety record for the first five months of 1953 has been established by contractors engaged in construction of navigation and flood control structures on the upper Mississippi River and its tributaries.

During this period only one lost-time injury occurred among approximately 100 participating contracting firms. In sharp contrast is the national accident average based on the same volume of construction—24 labor-losing injuries.

It costs an estimated $5,250 for each mishap resulting in the loss of manpower, according to the figures released by Army Engineer Col. Delbert B. Freeman, division engineer for the upper Mississippi Valley area.

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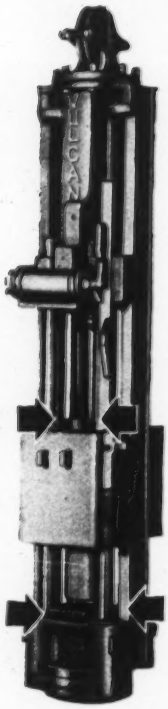

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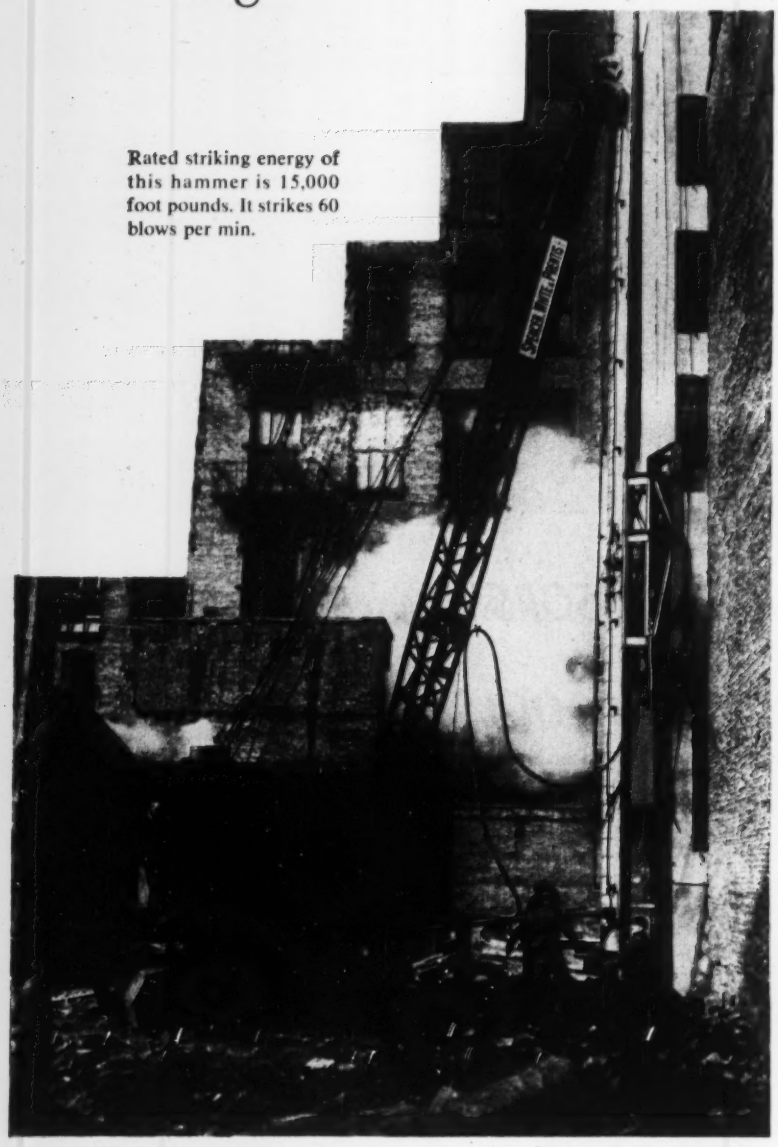

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Ching heads re-activated atomic panel

New group loses independent status under mediation service and may not make settlement recommendations

The Atomic Energy Labor-Management Relations Panel is coming into being again more than three months after President Eisenhower accepted the resignation of the Truman-appointed panel headed by William H. Davis, former National War Labor Board chairman.

Cyrus S. Ching, former Director of the Federal Mediation and Conciliation Service now a labor relations consultant in Washington, will head the new panel. Others who have agreed to serve part-time are Dr. George W. Taylor, former chairman of NWLB and the Wage Stabilization Board; Arthur M. Ross, Paul M. Guthrie and Thomas W. Holland, all formerly connected with NWLB and WSB, and Edward C. Cushman of Wayne University. Official appointment has been delayed, however, pending clearance.

Unlike the Davis panel, which operated independently and reported to the AEC, the Ching panel will be part of FMCS. Through FMCS it will report to the White House.

Otherwise, the panel's jurisdiction and functions will be pretty much the same as they have been since the panel was originally set up in 1949 after a threatened strike at Oak Ridge and a study of atomic labor relations problems by a special Presidential commission, headed by Davis, and Congress. One possible difference: The panel may be prohibited from making recommendations for settling disputes because it is part of FMCS and because its rules must not be inconsistent with the Taft-Hartley labor law. Federal mediators do not make recommendations in disputes and Taft-Hartley prohibits recommendations by boards of inquiry in national emergency disputes.

The panel will intervene in atomic labor troubles only after collective bargaining, mediation and conciliation have been utilized and (1) FMCS determines that they have failed and (2) AEC agrees that the dispute interferes with "an essential part" of the atomic energy program.

• **Informal use**—An attempt was made last week to use the panel informally, even before official appointment of the members, to settle a three-week strike of AFL carpenters at the atomic energy construction project near Portsmouth, Ohio.

The carpenter rate has been $2.50 an hour. The carpenters are asking for a $2.80-rate being paid on a federal housing project at Portsmouth pursuant to an agreement between the carpenters and the Southern Ohio Contractors Assn. That rate was also set by the Labor Dept. as the "prevailing rate" at Portsmouth to be paid under the Davis-Bacon Act on the government housing project, although earlier the Labor Dept. had set the rate at $2.50.

Peter Kiewit Sons' Co., contractor for the atomic construction, wants to pay the $2.65-rate recently negotiated by the carpenters at Chillicothe, Ohio, which is just as close to the construction job as Portsmouth. Legally, Kiewit does not have to pay more than the $2.50-rate set under the Davis-Bacon Act when construction began.

At a mediation conference in Washington, it was agreed to set up a special panel from those who will sit on the atomic panel. This panel would decide the issue. The carpenter membership, however, refused to go along because of the Labor Dept.'s determination that $2.80 . . . the legal "prevailing wage" at Portsmouth. They figure they are legally entitled to $2.80 and do not want to take a chance on the panel recommending less.

WITH PIPE AND PHONE Cyrus S. Ching, once head of federal mediation, takes new post.

The strike did not have serious impact on the construction in the first three weeks because most other crafts continued to work. Last week, however, construction had reached the stage where other work could not continue without the carpenters.

North California AGC to fight strike

Legal action has been chosen by the Associated General Contractors in northern and central California as their weapon against a "selective" strike by the AFL laborers' union. On June 9 AGC chapters in the strike area voted to:

• Seek an injunction to force laborers back to work.

• Sue the union and its officers for damages.

Walkouts started after wage negotiations collapsed on May 26 (ENR June 11, 1953, p. 28). The union said it was withdrawing men from jobs only where the contractors refused to pay the workers' demand of $2.05 an hour—an hourly pay hike of 20 cents.

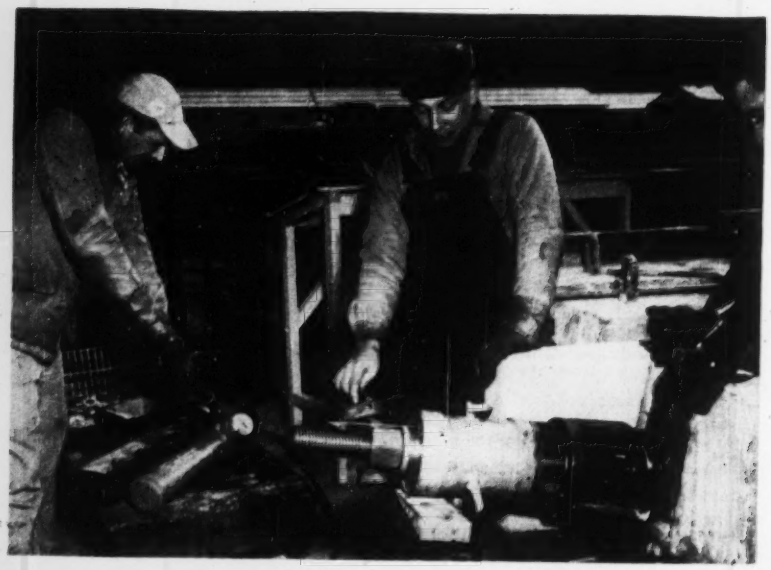
The number of men withdrawn from construction jobs, according to AGC is 12,000. The union's estimate is 35,000. Slowdowns, walkouts or picketing affects 75% of construction from Fresno to the Oregon border, declared J. Robert Mitsch, director of labor relations for AGC.

"The strike," Mitsch said, "has thrown some 30,000 men—laborers, carpenters and other crafts—out of work and has halted construction on many multi-million-dollar jobs." Defense projects struck include jobs at Mare Island and Travis Air Force Base. Work on the Pine Flat Dam also has stopped.

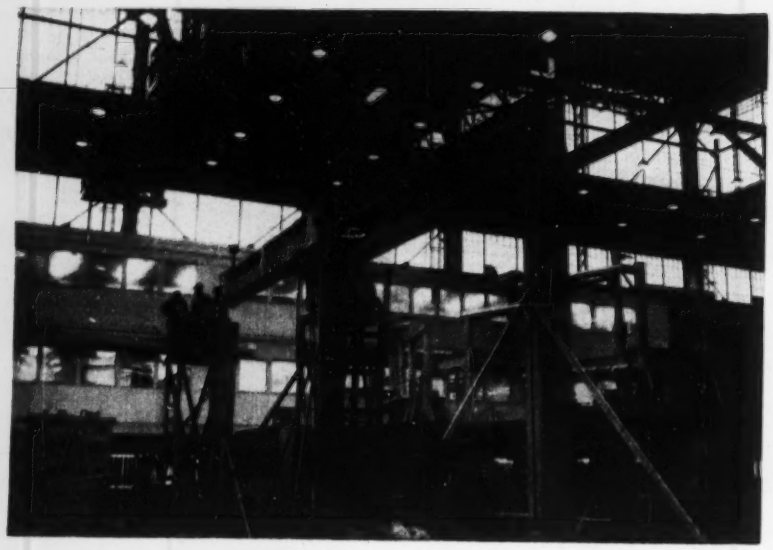
The AGC decision to seek legal aid followed a statement in which it announced that contractors were considering a general shutdown of industry in 45 counties.

Directors of AGC explained their stand—"The strike . . . is illegal. The AGC laborers' master agreement is still in effect. Under its terms the laborers are bound not to strike. The union did not give notices required by the Taft-Hartley law prior to undertaking strike action against contractors and builders. We are requiring all contractors and builders whose jobs have been shut down and who are suffering damage to report to our labor relations office the full extent of the damage."

Union strategy—to seek separate agreements with individual contractors—has netted good results, according to Charles Robinson, a business representative of the union.



Beams prestressed for . . .



Fast erection of mezzanine

F. W. Wilcox
Plant Engineer
The Glenn L. Martin Co.
Baltimore, Md.

Prestressed, precast concrete proved to be the key to solution of a production problem at a Baltimore, Md., plant of The Glenn L. Martin Co., aircraft manufacturer.

Additional production space was needed—and in a hurry. There wasn't enough time to build a completely new plant; so a decision was made to provide the needed space on a 300 x 375-ft. mezzanine inside an existing building. A casting yard was set up nearby, and within three months, nearly 800 precast and prestressed concrete members for the structural framing were fabricated and erected.

The mezzanine will be used for light manufacturing. It was designed for a 150-psf live load.

• **Plenty of room**—Ample space for the mezzanine was available. The roof is supported on steel trusses spanning 300 ft, the full width of the building. Furthermore, clear height between trusses and main production floor is 43½ ft, whereas the mezzanine floor is only 22 ft above the main floor.

Spacing of mezzanine columns was determined by the existence of a basement. The mezzanine supports had to be placed directly over the columns supporting the main floor, which is of flat-slab construction. Since basement columns are spaced 23 ft 5 in. x 25 ft, the same arrangement is used for the mezzanine.

• **Shortages threaten schedule**—When the floor framing was laid out on this basis last November, the plant engineering department found that nearly 800 structural members would be required. Steel could not be used for them because it could not be delivered before July—too late for the schedule. Even reinforcing steel could not be obtained in time in the quantities required for reinforced concrete.

Furthermore, concrete could not be cast inside the building because the moisture and dust might be transmitted through ventilation gratings into the basement and impair the high-precision machining being performed in that area. The only alternative was to use prestressed, precast members.

Prestressing steel in the form of cold-worked alloy bars could be obtained within a few weeks, and though it cost more per pound than reinforcing steel, the high-strength metal was needed in much smaller quantities. Another advantage of this decision was that the weight of beams and girders could be reduced to the extent that existing 5-ton overhead cranes in the building could erect them.

Design discussions with the Preload Company, consulting engineers, New York City, began Dec. 2, and on Dec. 24, working drawings were available. Construction started Jan. 12.

• **Production setup**—A 300x325-ft casting yard was set up on a concrete apron outside the existing building, about 800 ft from the mezzanine site. Facilities were provided for casting 12 columns, 27 beams and 12 girders per day, until a total of 199 columns, 375 beams and 199 girders was fabricated. Of this total, 340 beams and 118 girders were to be prestressed. (The remainder of the beams and girders, which are of reinforced concrete construction, are used around the perimeter of the mezzanine. The reinforced concrete girders required nine 1¼-in. dia bars for reinforcing, as compared with three high-strength bars of the same diameter in the prestressed girders.)

• **High-strength concrete**—Construction schedules indicated that high early strength concrete would be advantageous for precasting. Beams and girders could be prestressed in four

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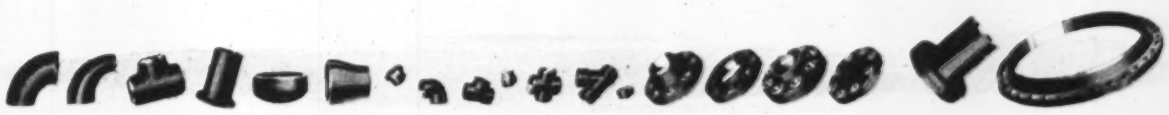

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ROWS OF FORMS for precast concrete members were laid out on a concrete apron at an aircraft plant in Baltimore, Md.

days, when the strength reached 4,000 psi. In 7 days, the concrete could develop 7,000 psi.

The contractor used 9 bags of cement per cubic yard of concrete, with a 4-in. slump. The mix was 1:1.5:2.1, plus a plasticizing agent to reduce the water-cement ratio. Maximum size of the pea-gravel coarse aggregate was ½ in.

With the high early strength developed by this mix, side forms could be removed the day after casting. The bottom forms, however, could not be recovered until the fourth day. Hence, they were the controlling factor in determining the production rate of the casting yard. To meet the schedule, 120 bottoms were provided.

Bottom forms were made of 2-in. plank, which was supported on 6x6-in. timbers. Side forms were constructed of ⅝-in. thick plywood and assembled by bolting.

Reinforcing steel was delivered in mill lengths. On the site, it was cut, bent and assembled into cages for placing in the forms.

For protection against winter weather, several rolling sheds were built to cover steel fabricating operations and to protect the freshly cast concrete. Wide enough to straddle two rows of forms, the sheds were roofed with a transparent plastic to utilize the heat of the sun during the day. Canvas curtains were installed at each end to retain the heat. A kerosene-fired warm-air heater maintained the temperature above freezing when heating was necessary.

Precast members were removed from the forms with crawler or truck cranes. Placed on long trailers that are normally used for hauling aircraft components, they were transported into the building and erected with overhead building cranes.

• **Column details**—Columns are of ordinary reinforced concrete construction. They are 14x20 in. in section, flaring to 25 in. at the top to provide adequate bearing for girders.

At the bottom, columns were equipped with a pair of steel angles for anchoring them in place. A matching pair of angles were either bolted into a poured foundation or into lead-sleeved plugs over existing basement columns. When the angles were welded together, the columns were 1½ in. above the footings. This space was later filled with a non-shrinking grout.

Continuous steel inserts were cast in two sides of each column. These formed a bolting recess that will be used for carrying utilities.

A ⅞-in. dia hairpin bar was incorporated at the upper end of each column. It was used for handling the member and also for tying beam and girder ends to the column.

• **Prestressed girders**—Seated directly on top of the columns and supporting beams on the top flange at ends and center, girders span 23 ft. They are rectangular in section near the beams, H-shape elsewhere. Weighing 5.2 tons apiece, they are 20 in. wide and 31 in. deep.

Prior to the casting of concrete for the girders, a small amount of reinforcing steel for stress distribution, plus some handling and connection inserts, were placed in the forms. Also, since prestressing bars were not to be bonded to the concrete initially, inserts were set in the forms to provide holes for the bars. These inserts consisted of flexible, light-gage metal tubing with a dummy steel bar temporarily inside.

When the concrete had attained sufficient strength for prestressing, the dummy bars were removed and the high-strength bars inserted. This procedure enabled the cold-worked alloy bars to be maintained at the proper temperature until the tensioning operation began.

Each girder was prestressed with three 1⅛-in. dia bars with threaded ends. The threads enabled the jack to grip the bars and also permitted anchoring by the tightening of a nut against a steel plate in the girder ends.

Two of the prestressing bars in each girder are curved in a vertical plane to give the prestressing force an upward component. The third is straight and placed near the bottom of the girder.

Each bar was tensioned to 100,000 lb in one step, with a hydraulic jack This task was carried out by three men, who tensioned about 40 bars per day. From time to time, though, the shift was doubled to maintain the schedule.

After the bars had been anchored at the girder ends, grout was forced into the tubing to establish bond between the bars and the girder concrete. Piping had been welded to the tubing in advance for this purpose.

• **Connections prestressed** – When placed on top of the columns, girders overlapped each other and enclosed the tie bars protruding from the columns. A horizontal ¾-in. dia bolt tied the overlapped girder ends together. After a pair of beam ends were set over the columns, a steel connecting plate was placed on top, then, the tie bars were tensioned to 6,800 lb and nuts on the bar ends tightened against the plate to tie the beam and girder ends to the columns. Lifting hooks were burned off beams and girders after erection.

Like the girders, beams are H-shape in section, except for short lengths of solid rectangular sections at the ends. Spanning 25 ft, they are 22 in. wide and 23 in. deep. They weigh 4.6 tons apiece.

The beams are prestressed with two end-anchored 1⅛-in. bars, each tensioned to 100,000 lb. These bars are curved in a vertical plane.

The beams were bedded in mortar on the girders. At the supports, the beams lap each other, forming a connection similar to that made between the girders.

• **Fast fastening**—Finishing operations were quickly completed. After the beams were in place, ¼ x 3-in. steel strips were attached on top with a cartridge-powered tool. Next, cellular steel metal deck was tack welded to these strips. Electric wires were strung through the cells of the deck so that power would be available at frequent intervals. Lighting fixtures were suspended under the mezzanine from small hooks stud welded to the steel deck.

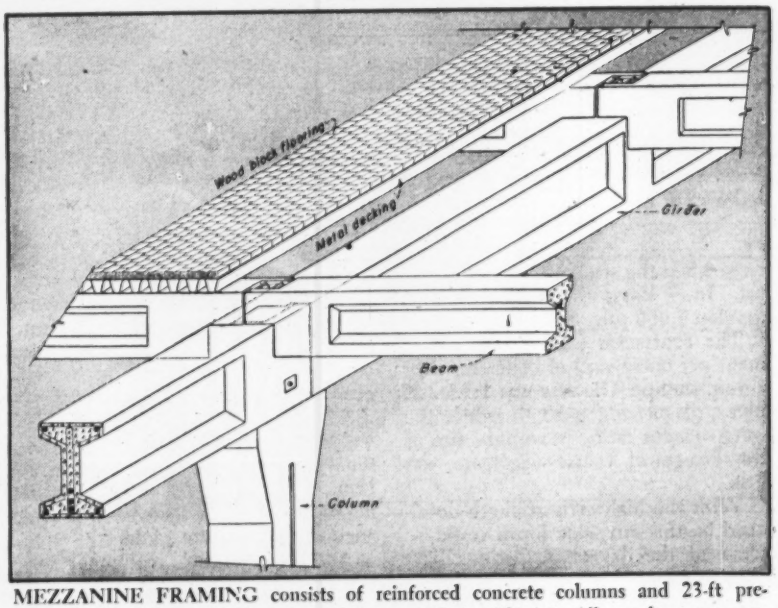
The top of the deck was coated with an asphalt emulsion. A felt base mopped with hot pitch was placed on this, and then 2-in. thick, creosoted wood block set in the pitch to serve as the finished floor surface.

On a typical day, 9 columns, 12 beams and six girders were cast. But on a record weekend, 114 units were erected, including movement from storage. At that time, three overhead cranes were available for erection and one for handling the members. The job was completed early in April.

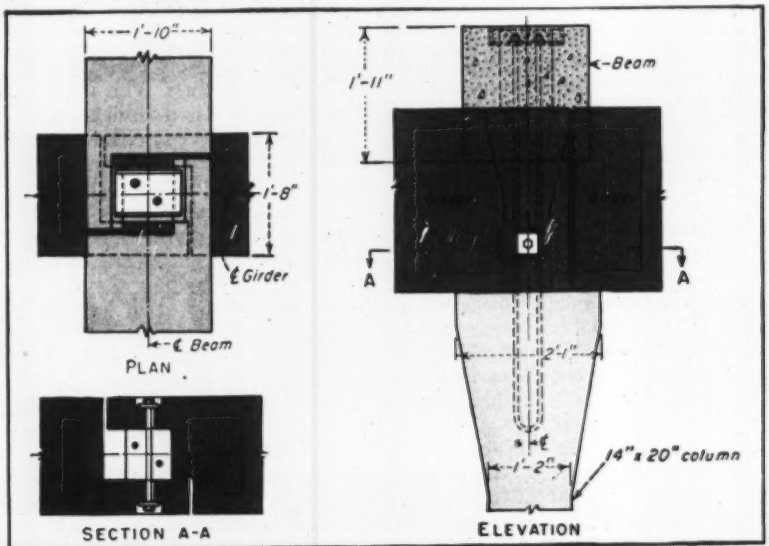
The mezzanine was designed and constructed by the Plant Engineering Department of The Glenn L. Martin Co., under the author's supervision. C. H. Skinner, chief of facilities engineering; G. W. Wadsworth, chief of building maintenance; and A. H. Woodward, project engineer, implemented the project.

Redding & Company furnished labor and supervision for field work. Stressteel Corp., Wilkes-Barre, Pa., supplied the prestressing bars and jacks.

FLEXIBLE METAL TUBING houses prestressing bars in the precast beams. Prestress was applied when the concrete attained a strength of 4,000 psi. After the bars were tensioned, grout was forced into the tubing to establish bond with the beam concrete.



MEZZANINE FRAMING consists of reinforced concrete columns and 23-ft prestressed girders that support prestressed beams at their midpoint. All members were precast and were erected with building cranes.



CONNECTION between column, girders and beams was made by prestressing hairpin rods protruding from the column. A horizontal bolt ties girder ends together.

FUNCTIONAL HOME nearly ready for Environmental Health Center, Cincinnati.

Public Health Service builds itself . . .

The latest in lab buildings

R. Raneri
Executive Officer
Environmental Health Center
Cincinnati, Ohio

East Third and Kilgour, a spot in Cincinnati that has been synonymous with water and sanitation research since the U. S. Public Health Service moved into old Kilgour Mansion in 1913, shortly will have a forwarding address. The new $4-million Environmental Health Center laboratory building will be opened for business late this summer on Cincinnati's Columbia Parkway at Grandin Road.

It has been a long time coming. Funds were authorized in 1948 (Public Law 845, Section 8b), and a poorly housed EHC, now separated in three locations in Cincinnati, has been anxiously waiting ever since.

Now that it's here the health center's staff of over 150 researchers and instructors believe that they have the last word in laboratory structures.

Planned on a functional basis to serve all present and proposed work of the EHC, the new laboratory building is also flexible enough to serve anticipated new developments. Its gross floor area of 159,000 sq ft is arranged on a modular plan of repeated standard units with non-load-bearing interior masonry walls of 4-in. concrete block to facilitate remodeling.

The building is of six stories, plus penthouse—a reinforced concrete, fireproof structure with brick facing. It is rectangular in shape, approximately 400x52 ft, and 97 ft high, with a special purpose wing at each end. One wing is pilot plant space; the other is for animal quarters, under which is laboratory trailer space.

• **Complex utility construction**—Practically every room, regardless of the use to which it is currently assigned, is so constructed that all laboratory utilities are available. Utilities include: high and low voltage electricity, hot and cold water, steam, compressed air, vacuum, gas and acid resistant waste lines.

Air-conditioning units are provided in the penthouse. They serve to heat and filter air circulated through most of the building. Air is brought into each module over the doorway from ducts in the central corridors and exhausted from the rooms through louvers in the doors to the hallways and return plenums. (A separate air supply and exhaust system is provided for the animal quarters.)

The various utilities are brought up from headers at the bottom floor through risers at each module. Access panels with valved branches at floor and ceiling levels are provided for each module. Runouts to laboratory furniture will be made from these access panels.

The windows are steel framed, with two outward opening casement sash and an inward opening ventilator sash at the bottom. Windows are provided with venetian blinds.

Lighting is designed to provide 50-ft-candle intensity at laboratory bench level from fluorescent fixtures.

Flooring throughout the building, except in some special areas, is asphalt tile.

One wing of the building—3,600 sq ft—is designed for pilot plant scale tests on water and industrial and municipal wastes. It has 37 ft of head room and a 5-ton overhead crane for moving equipment in construction of pilot plants. Raw water from the Little Miami River will be pumped some 7,500 ft through a 6-in. line to this part of the building. A 4-in. line with pumping facilities will connect with a city sewer 1,500 ft away.

There is also provision for pilot-plant scale experimentation on milk and food handling and processing and the effectiveness of sanitary practices.

Other facilities and services include a technical library; specially designed constant temperature rooms for bacteriology; chemistry, biology, and animal rooms; chemical stockroom; photographic darkrooms, centralized glass washing, sterilizing, and media preparation rooms; centralized water stills with a capacity of approximately 300 gpd; and several special instrument rooms.

• **Built-in safety**—Special safety features for the protection of the staff include completely separate air exhaust systems to certain areas and two emergency showers with chain pulls in the halls on each floor. New hoods are of the "purged" type with air provided and exhausted through a separate system, not part of the building ventilating equipment.

Radiological research space is elaborately protected with layers of foil and battleship linoleum covering the floor to prevent any spilled radioactive material from penetrating the concrete. Access to this section is only via a change room (where lab clothes are changed), except in case of emergency.

• **Varied use**—The center is the focal point for the Public Health Service in the field of environmental health. As such it is responsible for (1) developing new methods and procedures for use in the field; (2) conducting laboratory studies in the biological, toxicological, physical, chemical and engineering aspects; (3) making field investigations of special problems; (4) conducting training courses for health personnel in the operating procedures of environmental sanitation; (5) furnishing consultation services to governmental agencies, health authorities, and other organizations on specialized problems; and (6) disseminating the results of research investigations and special studies.

V. G. MacKenzie is officer in charge of the Environmental Health Center. A. H. Stevenson is deputy officer in charge.

The laboratory building was designed by the Public Buildings Service, General Services Administration. General contractor on its construction was Grove, Shephard, Wilson and Kruge, Inc., New York, N. Y., and James McHugh Construction Co., Chicago, Ill., a joint venture.

SPEED where it saves you most

Here a Bucyrus-Erie drill pounds out hole in a rock pit. Derrick head shock absorber protects machinery from vibration — reduces cable wear by keeping shock loads down. A Bucyrus-Erie "first" the rubber shock absorber is the most successful yet devised.

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Big 5⅝ to 12-in. holes—quick— The right balance of tool travel distance, tool weight, and blows per minute — combined with an unmatched rock shattering snap at the impact point — put these rigs "holes ahead" in penetration speed.

Quick moves — Long, sure-footed crawlers mean fast, easy rolling over rough ground — positive traction up 30 percent grades.

Rapid set-ups — Hydraulic leveling jacks (standard on 50-T; optional on 29-T) eliminate elaborate ground preparations, blocking and cribbing. Built-in stabilizing jacks (on the 22-T, 27-T and 29-T machines) provide time-saving 3-point setups even under adverse ground conditions.

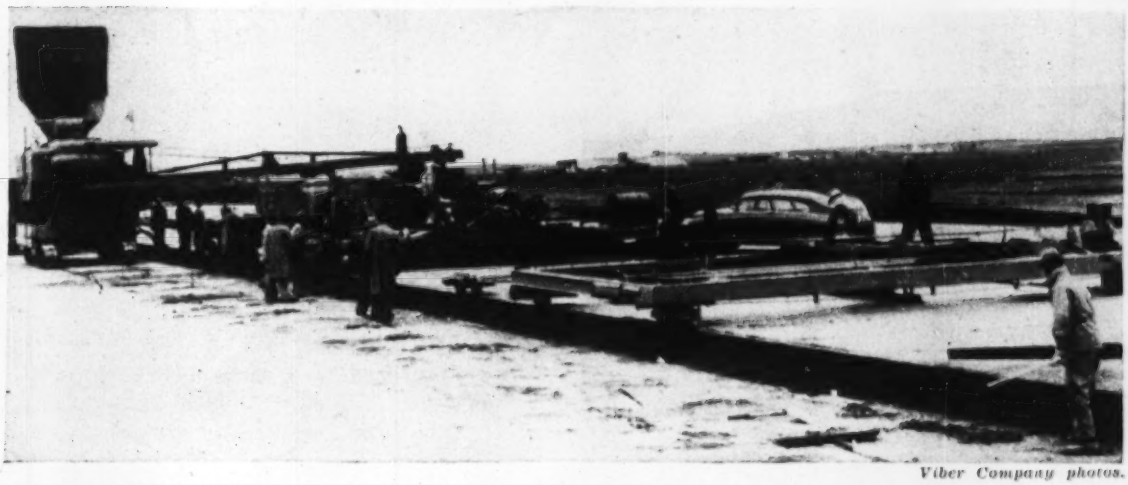
Close-grouped controls — Easy handling levers are positioned close together for convenient reach. A driller can run this rig at top speed for long periods without slow down. Built-in tool wrenches (on all except 22-T) safely speed tool changing.

For fast, profitable operation standardize on big hole, fast hole Bucyrus-Erie drills. Four models—5⅝ to 12-in. hole capacities.

5B53

BUCYRUS-ERIE COMPANY

South Milwaukee, Wisconsin



Viber Company photos.

CLOSE FINISHING behind the mixer is made possible by using concrete having a low water content and vibrating full depth of the 14-, 16- or 20-in. parking aprons.

Airfield pavement vibrated full-depth

Spring paving got under way April 9 at the U. S. Air Force Base just outside Lincoln, Neb. Two local contractors—Abel Construction Co. and Dobson & Robinson—hold a contract for placing 340,000 cu yd of concrete in the parking apron area.

About 80% of the concrete will be placed to a depth of 20 in. on compacted subgrade. The remainder will be 14-in. and 16-in. overlays on existing 6-in. concrete pavement.

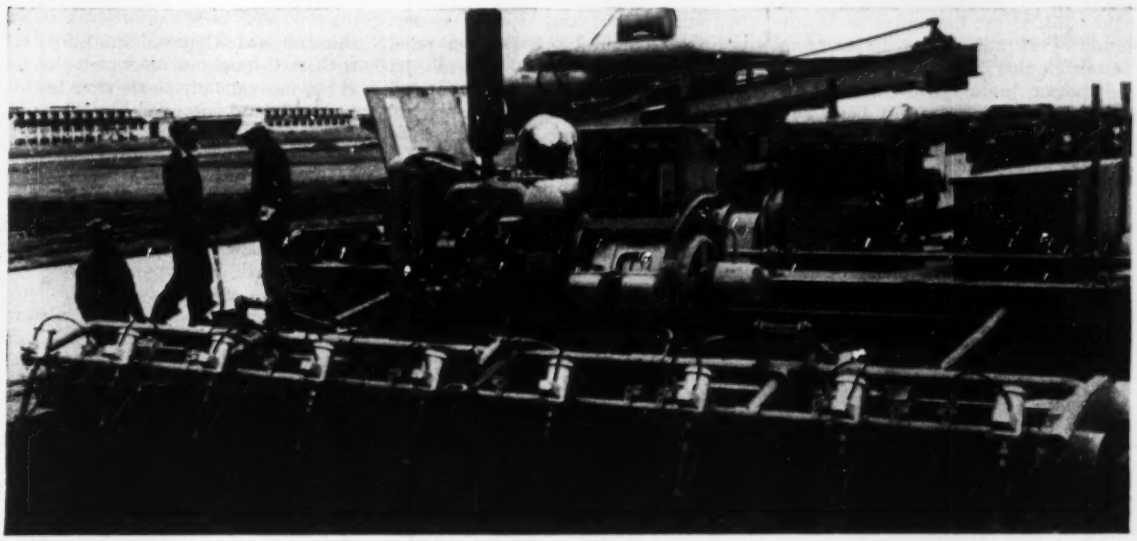
• **For heavy aircraft**—When the job is finished this October it will provide parking area capable of supporting present and projected future aircraft, either propeller or jet powered.

The two contracting companies in the joint venture are running separate paving operations on different parts of the job. Each is using conventional mixing, spreading and finishing equipment, plus an improved internal vibrating machine that produces uniform compaction across the full 25-ft width and to the full depth of the slab.

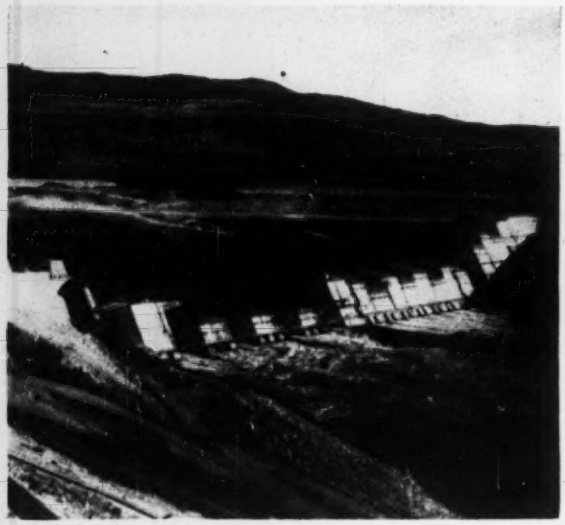
• **Low-slump concrete**—The concrete has a relatively low water content, with a slump ranging between ¾- and 1-in. This permits its being finished immediately after being vibrated.

The vibrating machine mounts 9 electrically driven vibrators, with 3-in. dia. heads on a framework controlled hydraulically. This frame provides for both a vertical and a rotational movement of the vibrators. They can be lowered into the concrete or raised out of it, and rotated in a plane parallel to the direction of travel. The latter movement permits adjustment of the vibrators so they can be trailed, rather than forced, through the concrete.

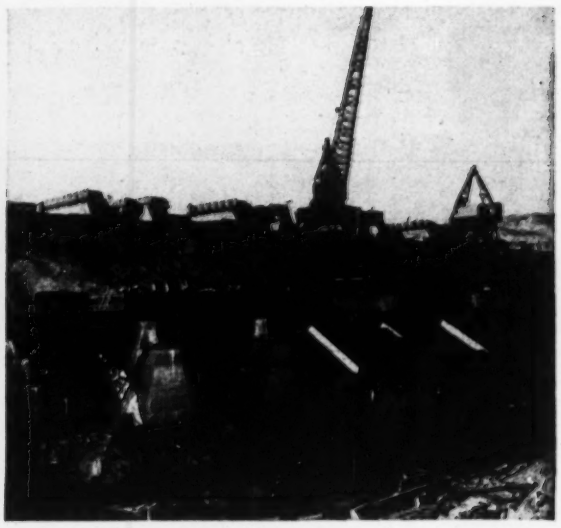
Electric power for driving the vibrators is furnished by a 25-kva, 120-v generator driven by a heavy-duty, gas-driven engine. This power unit, which has a takeoff to drive the hydraulic pump supplying the hydraulic rams, is mounted in the center of the rigid trailer which also supports the vibrator frame and rides the steel side forms.



VIBRATING MACHINE mounts 9 vibrators driven by electric power from a 125-kva generator and is raised, lowered or rotated in the direction of travel by a hydraulically controlled framework.



DAM IS SEPARATE—Chief Joseph Dam, 220 ft high and 2,260 ft long, is in river's main channel. Water will go to power house via broad intake channel in background.



POWER STRUCTURE—Ultimately extending 2,030 ft along Columbia's left bank, intake (top) and power house (foreground) will contain as much concrete as main dam.

Chief Joseph arises

Here's how work is divided between two joint ventures as they push final phases of U. S. Engineers dam on Columbia

Two big contractor combines are placing concrete at a 3,500-cu yd daily rate this season, their aim being to put Chief Joseph Dam generating units at the service of power-short Pacific Northwest states by the fall of 1955.

One reason two construction outfits are doing the job is that it breaks down into separate units: A main dam, which is being built from the right bank of the Columbia in Washington — 51 miles downstream from Grand Coulee Dam; and an intake and power house structure running downstream along the left bank and at right angles to the dam. A 3,000-ft intake channel 1,000 ft wide, sweeps around the dam's left abutment and leads to the power structure. The intake will stretch more than 2,000 ft along the channel's riverward side.

Progress is steady today, but there was a time when Chief Joseph gave contractors and Army Engineers a rough time. (The dam is named after an Indian leader who also gave the Army trouble. Chief Joseph, whose tale is told in ENR, Sept. 14, 1950, p. 136, now lies in Nespelem cemetery, 50 miles away from the damsite.)

The worst problem at first was a scoured rock river bottom; which made cofferdam placement a touch-and-go matter. Then there was a deep, pervious stratum in the right bank. Reservoir water had to be kept away from that stratum. The remaining major factor was the one that always plagues construction on the Columbia: tremendous seasonal flows.

• Project description—These flows, of course, are what will make Chief Joseph second only to Grand Coulee in installed generating capacity. Ultimately, with twenty-seven 64,000-kw units on the line, this project will be able to put out 1,728,000 kw. (USBR's Grand Coulee has a rated capacity of 1,794,000 kw.) Power head will be 173 ft. Immediate installation at Chief Joseph is to be 16 units, although the intake must be built to its full 2,036-ft length, because it combines with the main dam to impound the reservoir. The contract with Columbia River Constructors (a joint venture headed by Morrison-Knudsen Co., Inc., Boise, Idaho) calls for 1,646 ft of powerhouse substructure (20 units) and 1,336 ft of superstructure (17 units).

Chief Joseph Builders, a joint venture headed by L. E. Dixon Co., Los Angeles, is raising the main dam, for which first-stage diversion was made by Peter Kiewit Sons, of Omaha. This structure is 2,260 ft long from right abutment to the end of its left-bank intake-channel wall, which curves downstream to tie in with the intake structure. The spillway, which will carry 19 tainter gates, is to extend 922 ft along the main dam's mid portion. Total height of 228 ft will back the reservoir to Grand Coulee's tailwater.

Quantities include 981,000 cu yd of concrete in the main dam, 800,000 cu yd of concrete in the present power structure contract, and 10,000,000 cu yd of excavation. This last figure includes 2,500,000 cu yd, mostly rock, taken from the intake channel by General Construction Co., of Seattle.

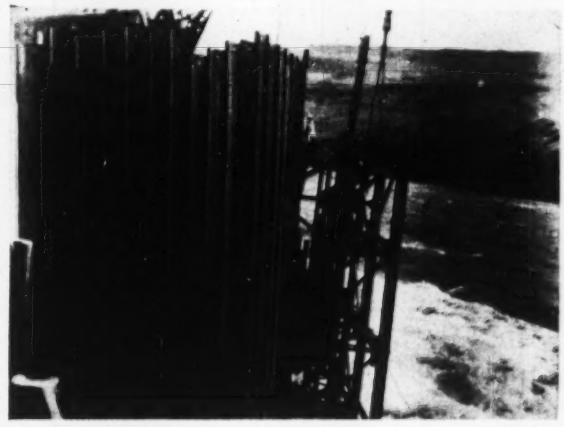
• Pervious abutment overcome—Another major excavation item was borrow for an impervious blanket that was placed over the porous stratum in the right bank. Extending from a point well below the damsite to another point about 2,000 ft upstream, this "openwork gravel" stratum is 100 ft thick throughout most of its length. It lies immediately above river bottom bed rock, and is topped by 100 to 200 ft of well-graded till, which places easily, and compacts into a tight formation, so it was ideal material for the blanket.

To get a toehold for the impervious blanket, Kiewit built a series of puddle dams — earth cofferdams — along the river bank upstream from his first-stage cofferdam work. After dewatering these cofferdams he commenced placing the blanket in compacted layers 40 ft wide, up the face of the pervious stratum. Because fill material was right there on top, it was an easy, downhill haul.

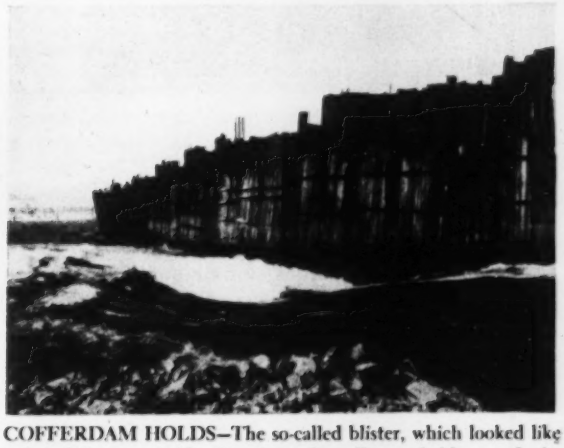
As an additional precaution, a pervious-walled tunnel was driven 1,000 ft into the openwork gravel zone, from a point near the dam's downstream toe. This tunnel is rated to intercept the flow from a sizable break in the

Photos by U. S. Army Corps of Engineers and ENR

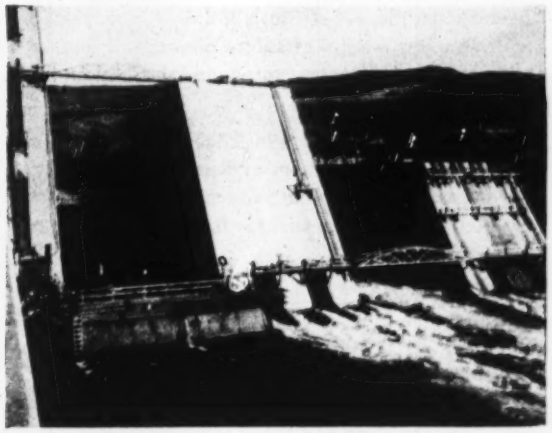
PUDDLE DAMS helped Peter Kewit Sons place impervious blanket over deep gravel stratum in right bank. First-stage cofferdam cells, under construction in background, were difficult to hold on bare-rock bottom three years ago.



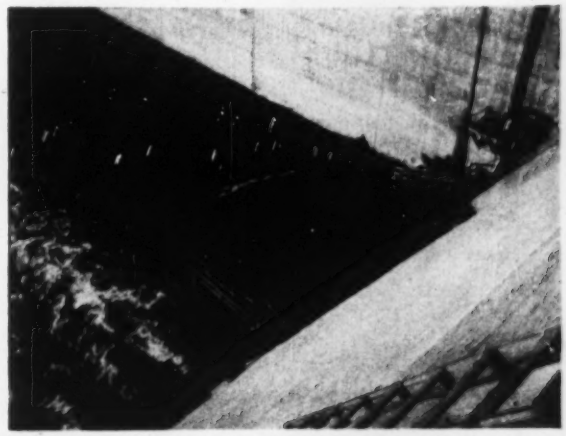
BLISTER FRAMEWORK held sheetpiles that protected diver from current while he placed sack concrete at bases of endangered cells, thus preventing collapse from loss of fill.



COFFERDAM HOLDS—The so-called blister, which looked like a board fence outside the sheetpile cells, probably saved the cofferdam during the 1951 spring flood.

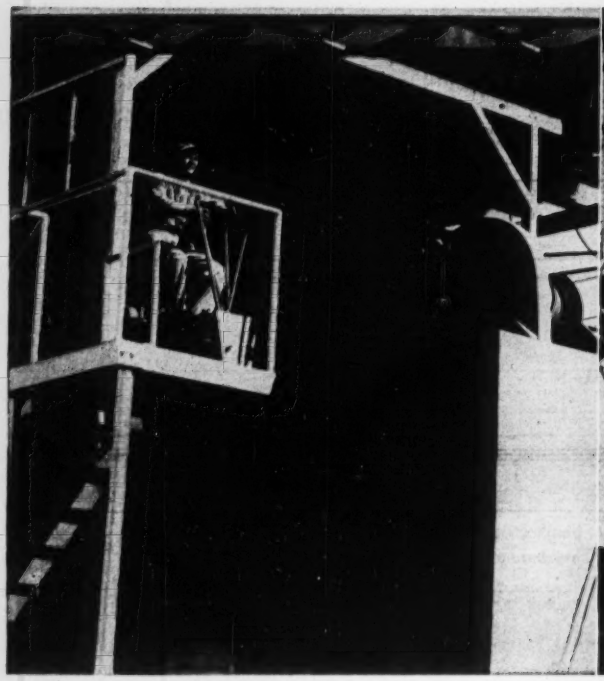


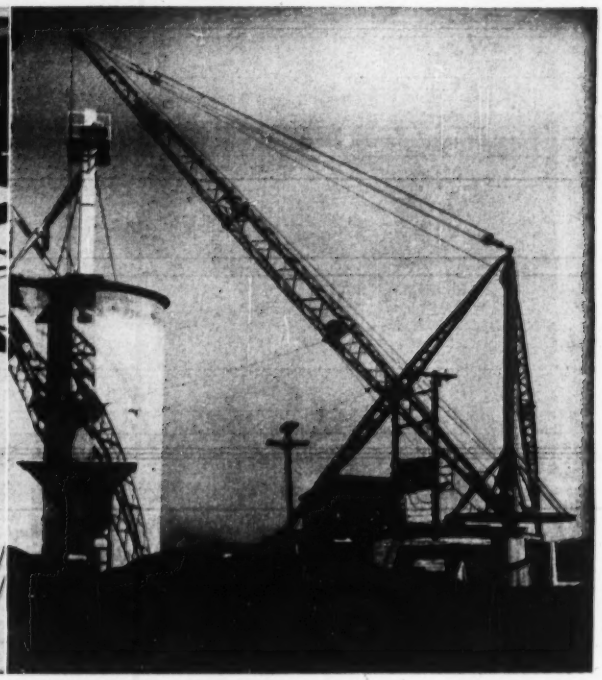
EASIER DIVERSION—Low blocks, which passed river's high flows during second-stage diversion, are closed for concreting with an upstream gate and downstream caisson.



TAILOR-MADE caisson fits downstream side of low block, permitting workmen to place forms for concreting. Steel rails weigh it down; rubber seal slows leakage.

PAIRED FOR PRODUCTION





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blanket, preventing an abutment wash-out.

• **Blister saves cofferdam** — Kiewit's first-stage cofferdam was a series of earthfilled sheetpile cells, enclosing the right half of the damsite. The river thus was diverted to the left half of its regular channel. The cofferdam was completed successfully, and was ready for use by Columbia River Constructors, when signs of wash-out appeared in some of the cells during high river flow in the spring of 1951.

Because the river bottom was scoured bare granite, sheetpiles did not penetrate; they merely landed on high points, leaving a series of irregular-shaped openings on the undulating bottom.

Because of high water velocities it was impossible to keep any effective kind of dumped fill in place over these openings, so they permitted entry of water flows that undermined cell fills.

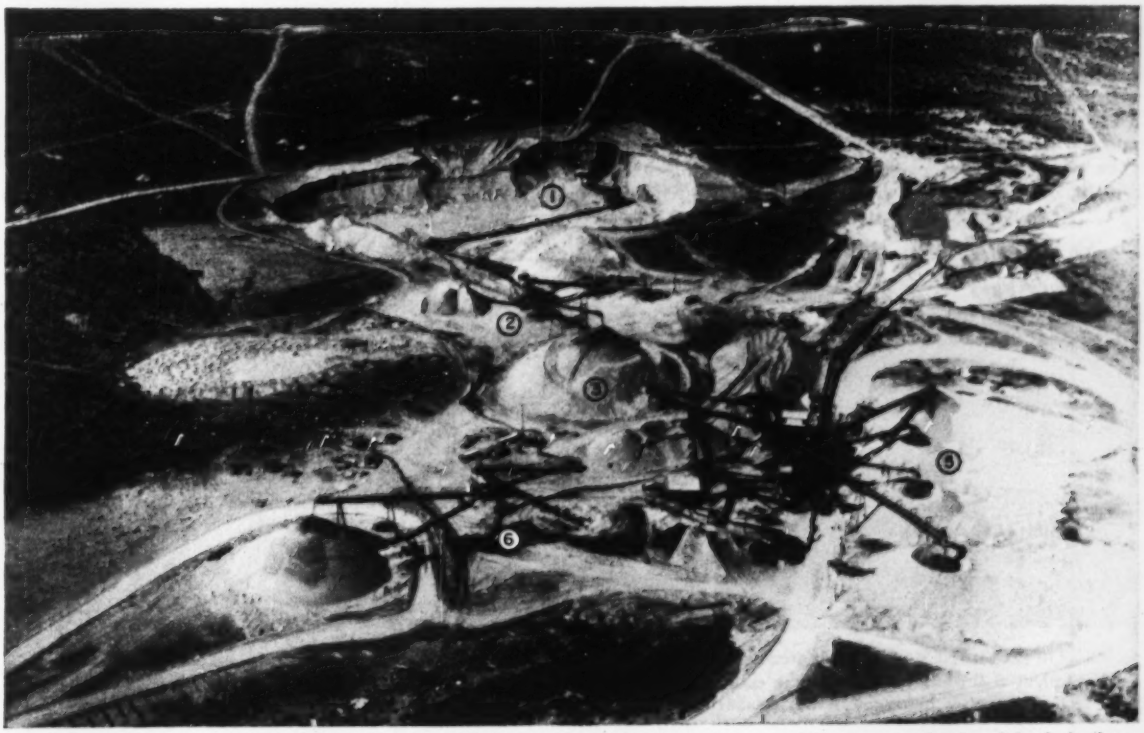
The solution was to hand-place bagged concrete against the openings, first stilling the water by building a "blister," or sheetpile fence 500 ft long and far enough away from the cells to provide working space for a diver. Pipe frameworks were fabricated for the blister. They had horizontal slots to hold sheetpiles, and brackets for attachment to cells. Holes were drilled in the river bottom to receive the frames' uprights, then the frames were installed and sheetpiles were placed. Bagged concrete placement proceeded without incident and the cofferdam was saved.

• **An easier diversion**—Three blocks were left low in the dam's first half, to accommodate high flows during second-stage diversion. (A cellular cofferdam protected second-stage construction, too.) Now that these low-block gaps have served their purpose, they are being filled with concrete. Low river flow will be handled by sluices. Dewatering is being accomplished with a heavy stop-gate 45 ft high, placed across the upstream opening, and a special caisson that fits the downstream opening, making room for form placement. The caisson is 30 ft high.

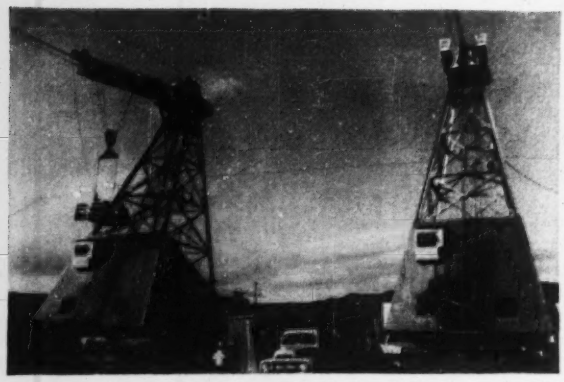
• **Good aggregates**—While site conditions gave some trouble in the diversions, they are favorable for concrete construction. Gravel deposits at the dam site are reactive, but it is only three miles to an adequate supply of good material. The two contractors are working pits within a mile of each other. One of the aggregate-producing plants, operated by CJB, is just about as automatic as today's machines and controls can make it (see illustration). Three men work in the pit, where an electric shovel feeds a conveyor train leading to a scalping and crushing plant. Product of this plant—minus 6 in.—goes through a storage pile to a screening tower that separates four sizes of coarse aggregate, as well as sand. An operator in the top of this tower controls all conveyors.

AGGREGATE CONTROL—Operator in top of screening tower controls flow of gravel through aggregate plant.

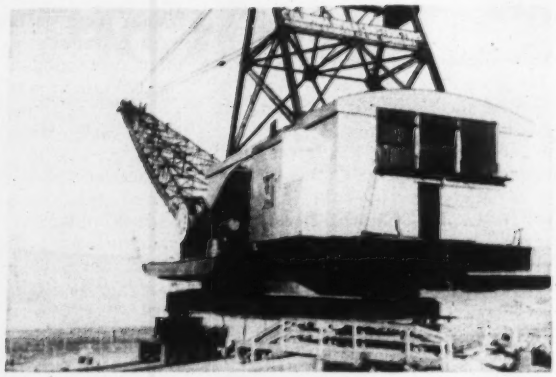
Each sized-aggregate and sand pile



AGGREGATE MANUFACTURE for Chief Joseph Dam is as nearly automatic as possible. At pit (1) shovel loads bank-run onto belt to crusher (2), which feeds minus 6-in. to stockpile (3). Material reclaimed from stockpile goes to top of screening tower (4), from which radiate conveyors to coarse-aggregate piles (5) and sand piles (6).



FOR DAM, the choice for material handling was a pair of cableways from these head towers to a common tail tower.



FOR POWER STRUCTURE crane handles materials. This big walker was put on rails to do intake concreting.

has a reclaiming tunnel whose conveyor feeds directly into a truck when it parks alongside the pile. The truck operator can reach the conveyor controls from his cab, so that all he needs to do when he wants a load is to reach out and start the machinery moving, stopping it when he has enough. Production of this plant is 400 tons per hour.

• **Cableway vs cranes**—The two Chief Joseph structural contracts are object lessons in the kinds of lifting equipment that are best applied to different types of work. The dam is a straight mass-concrete job, calling for a concentration of lifting effort at each of a series of work-sites (block lifts) completely covering a long, narrow area. Such a situation is ideal for a cableway, with its high-speed, low-flexibility characteristics. (Flexibility is improved somewhat at Chief Joseph by two cableways, but their principal objective is greater concrete-handling capacity.)

The intake and power house, on the other hand, require great flexibility for lifting equipment. Concrete placement occurs at a number of places at the same time. Individual pours are smaller than in main-dam lifts, but in their total they are comparable. So there must be several lifting units. These are crawler cranes, two rail-mounted whirlers with 150-ft booms, and a huge walker, with 205-ft boom. (The walker, which now is rail-mounted, will be restored to its original condition and rigged as a 15-yd dragline when the time comes to remove a natural cofferdam between the powerhouse and the river.)

• **Concrete progress**—Both the cranes and the cableways get their concrete in buckets from railroad cars that shuttle from concrete plants—one at the downstream end of the power structure, the other across the river and upstream, at the main dam's right abutment. Concrete plants are similar, except that the main-dam plant has cooling equipment for mass concrete. Chief Joseph Builders, working an 8-hour day, are turning out 1,000 cu yd daily, having placed nearly three-fourths of their 981,000-cu yd total. Target date for dam completion is Aug. 1, 1955. Columbia River Constructors are on a round-the-clock basis, placing 2,000-2,500 cu yd daily. They are one-fourth finished with their 800,000 cu yd, their deadline being Aug. 1, 1956. Final cost of Chief Joseph project is estimated at $193 million.

• **Management**—Chief Joseph Dam is being built by the Seattle District, U. S. Army Corps of Engineers. N. A. Matthias is district engineer. Resident engineer is C. H. Wagner, and Rufus Jackson is assistant resident engineer. Project managers for Chief Joseph Builders and Columbia River Constructors are W. N. Evans and P. J. Soukup, respectively.

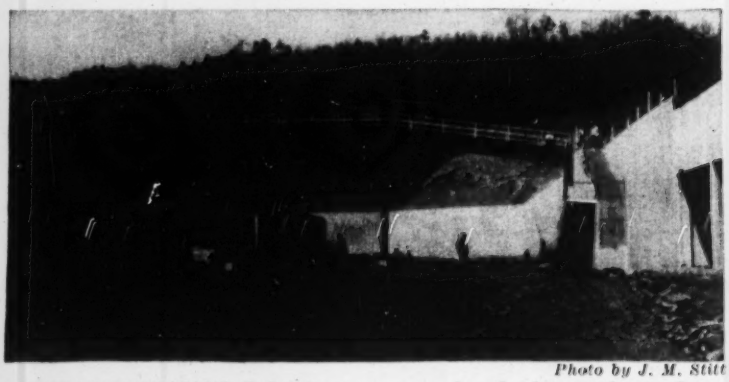


Photo by J. M. Stitt

ROOFTOP ENTRANCE—Pedestrian overpasses, such as the above, at the new Sperry-Farragut plant at Bristol, Tenn., lead from employee parking areas into the 500,000-sq ft factory at roof or mezzanine levels. Concrete stairways (right) are provided for emergency use. Designed by Smith, Hinchman & Grylls, Inc., of Detroit, Mich., the plant will produce electronic equipment for the U. S. Navy Bureau of Aeronautics. The overpasses and a circular road will add to plant security.

Anti-pollution drive in Nashville area

Sixteen industries in the Nashville area have begun correcting stream pollution problems. This is being done in response to a drive conducted by the Tennessee State Stream Pollution Board. These sixteen industries are among the 17 municipalities and 72 industries, whose discharge of sewage and industrial wastes was pronounced critical by the state pollution board last November.

Out of a total of 205 industries known to be discharging industrial waste into surface streams, 71 are taking corrective action. Sixteen others have provided what is considered adequate treatment. However, 118 firms have not, to date, reported satisfactory progress or have been unable to find an adequate solution of the industrial waste problem.

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Ohio villages balk at pollution control

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Humming this hymn of patience, John Porterfield, M.D., has busied himself for two years, nudging the cities and villages of Ohio into cleaning up their sewage before pouring it into the state's rivers. He's chairman of the Water Pollution Control Board of the Ohio Department of Health.

The patience of Porterfield—and the rest of Ohio's anti-pollutionists—is on trial now. A band of vociferous small communities wants to nibble away at the Ohio pollution control law which went into effect nine months ago to assure Ohio's compliance with the eight-state pact that is the basis of the Ohio River Valley Water Sanitation Commission.

• **Exemption bill**—Legislators, representing a dozen or so villages have worked a bill up to the floor of Ohio's House of Representatives that would exempt villages under 5,000 population from all provisions of the pollution control measure.

The House Conservation Committee, latest to favor the exemption bill, heard spokesmen for about 15 villages plead that requirements of the law necessitating the building of treatment plants would bankrupt them. They made grim mention of $1,000 to $3,000 costs per family unit for sewage plants, and foresaw monthly sewer service charges up to $15 a household.

Porterfield explained that 131 villages of the type seeking exemption already have sewage treatment plants, and that 260 of Ohio's 760 villages are under orders of the control board to take steps toward building such plants. Exemptions had been given, he said, to 362 villages that had no water systems, caused no significant pollution, or fed their sewage into other villages' systems.

Indicating a policy of softening of the rules for smaller communities, the director explained that villages, especially those with serious financial problems were given 18-month periods—often with extensions—in which to file a general plan, while cities were given only two to four months to take similar steps.

In answer to the charge that plant costs were too high, Porterfield pointed to Louisville, Ohio, population 3,901, which built an activated sludge treatment plant (see picture) in 1951 for $79 per capita. His department, he asserted, has no records of sewer service charges higher than $4 a month.

Porterfield's rebuttal did not appear to sway the committee, and it seemed probable that the exemption bill would be passed by the predominantly rural lower chamber of the state legislature. The senate is another matter.

Waiting to pounce on the bill is Senator William H. Deddens, fiery defender of the Water Pollution Control Board, and father of the law from which the villages are seeking exemption. He's on two committees—agriculture and conservation—through which the measure may have to move, giving him a chance to fire both barrels.

As a starter, Deddens said of the exemption bill, "It's completely asinine. It would open the way for complete destruction of the law." And he warned: "If we exempt villages of 5,000 now, we'll be asked next to exempt cities of 10,000, and so on," adding that the bill would force Ohio to violate its obligations under the Ohio River Valley Compact.

• **Kentucky interested**—Kentuckians, with troubles of their own in living up to the Ohio Valley pact, watched the Ohio squabble with mild dismay. For example, W. D.

DOCTOR JOHN PORTERFIELD, anti-pollutionist (right), confers with F. H. Waring, Ohio Health Department chief engineer.

Cincinnati Post photo

"IT'S ASININE," says Senator Deddens of exemption bill.

Anderson, secretary of a sewer district comprising 16 towns in two Kentucky counties, believed that the valley agreement might as well be forgotten if Ohio villages are exempted. His district has been looking covetously at the Ohio law, which makes it possible to levy sewer service charges.

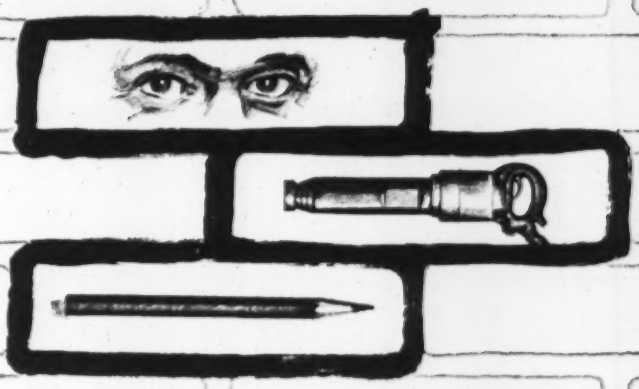
But Kentucky was having a feud of its own. A lengthy buck-passing game has threatened to continue delaying work on a $12-million sewage treatment plant for the Louisville Metropolitan Sewer District. The district can't put up the money, and Louisville says that city can't issue the necessary bonds. The Kentucky Water Pollution Control Commission has ordered the bickering stopped by year's end.

• **Cleveland troubles**—Top problem region in the one-third of Ohio not draining into the Ohio River system is the Cleveland area. Villages in the Cleveland cluster, busiest and fastest-growing section in the state, could look forward in gloom to the probability that their dilemma would become worse before starting to get better.

Cleveland, eying the mounting flood of suburban sewage draining through it, is pushing a $14-million expansion of its disposal facilities.

"It's all pouring into Cleveland, and it's not fair," says Proctor Noyes, director of the Cleveland Regional Planning Commission. He's advocating a regional authority, a sewer and water district not hampered by present political boundaries. So far, more than 10 communities have joined the clamor for such an authority.

men, equipment, experience . . .



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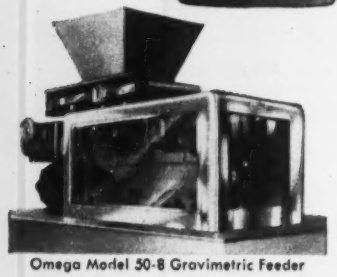

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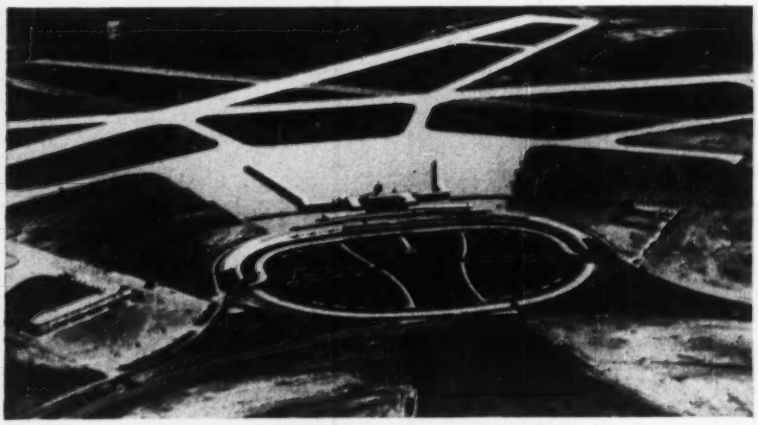


NEW FORT WORTH AIRPORT has built-in nest for 'copters.

Activity booms on nation's new airports

Larger passenger terminals, longer runways appear; designers keep future aircraft needs in mind

With an eye toward the age of commercial jet aviation and the possibilities of helicopter communications, airport activity is getting under way in cities across the country.

Operations have been started on Amon Carter Field, the Fort Worth, Tex., International Airport which will occupy a 1,780-acre tract 17 miles from the downtown business section. The $13-million airport was originally a joint Dallas-Fort Worth endeavor, but Dallas pulled out and is now engaged in the $12-million expansion of its own Love field.

These airport sites are in initial planning stages:

• **Toledo, Ohio**—Voters okayed plans for construction of a new municipal airport on the Oak Openings site, a location already purchased by the city. Approval authorized the city council to spend up to $3 million for construction and all major contracts are expected to be awarded this year.

• **Oakland, Calif.**—Major development of the municipal airport is being planned by the Board of Port Commissioners after a $10-million bond issue won a majority vote in the recent city election. Improvements under the expansion program include a new passenger terminal building.

• **Buffalo, N. Y.**—Present terminal building space will be tripled by preliminary airport expansion plans delivered to the parks commissioner. The program calls for additions at the ends of the present building, with provision for future growth.

The otherwise positive picture was marred by Los Angeles voters who, failed to approve a $33-million bond issue for an international airport (ENR June 11, 1953, p. 47). The proposal received a majority vote but not the necessary two-thirds for approval.

Detroit water study finally gets under way

Two years ago, the Wayne County (Detroit) Board of Supervisors authorized establishment of a 26-member Metropolitan Area Water and Sewer Study Committee to look into the feasibility of merging under one regional authority the water distribution and sewage disposal facilities of all governmental units in Wayne, Oakland, Washtenaw and Macomb counties, Mich.

First action will be taken this week, however, as the group goes into session to consider the merger, which the Detroit Water Board says would permit co-ordinated planning, better financing and more expeditious construction of new facilities.

Initial item to come under study in June will be a report that the present Detroit area water supply system is inadequate. Seven technical experts have turned in a report that "tremendous sums" of money will be needed for a system that will maintain "reasonable standards of health and safety."

Acting as a deterrent to all present plans is a 1929 constitutional amendment which provides that no community may join such an authority without a majority vote of its citizens.

Where to park

Over, under and off the street—cities try 'em all

Few cities can—or want to—look forward to as sudden and overwhelming a solution of downtown congestion as was made possible in Waco by its tornado disaster of early May.

Even while the work of clearing debris progressed, civic and business leaders gave approval for a new business center. A master plan for unified reconstruction is being prepared by co-operating architects with major consideration to be given to parking facilities on roof areas of the one-story buildings to be built.

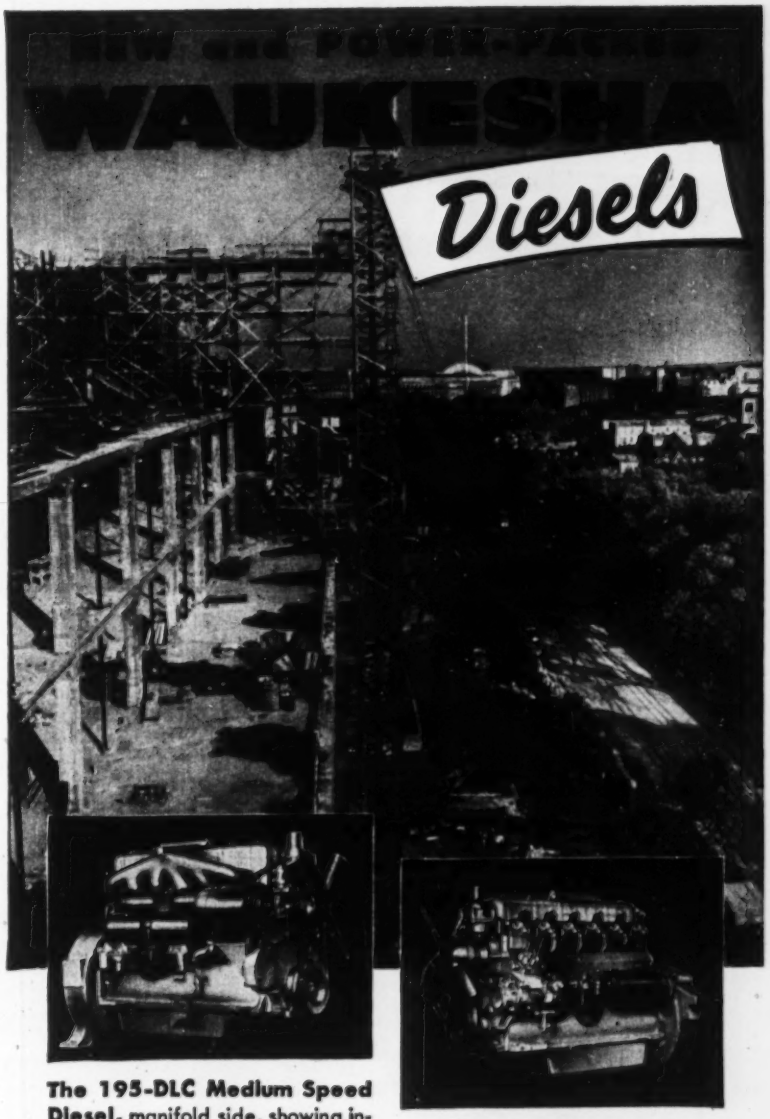
Pressure of congestion in business-area streets has become one of the most critical problems of American cities and the cost of alleviation in various cities will range from $1 million to $8 million, city officials are discovering.

The most difficult problem faced is acquisition and clearance of land. High land values in business sections necessitate allocation of large sums, in some cases as much as $1,000 per car space. Records, however, indicate that downtown parking facilities are a good financial investment as well as a boon to the shopper, businessman, and traffic cop.

• **Build 'em on top**—The over-the-street plan is exemplified by the proposal of Sanger Bros. department store in Dallas, Tex., for an adjoining structure to cover the street and sidewalks for the length of a city block. The reinforced concrete building would cover 40,000 sq. ft. and be capable of storing 550 cars. It would consist of four levels plus a two-level overhead section crossing the street and connecting with the store. Dallas officials, dubious as to the effect of such a structure, have withheld approval pending results of an investigation.

• **Building 'em under**—The underground methods for relieving congestion have as their proponents Jacksonville, Cincinnati, and Memphis. Mayor Frank T. Tobey of Memphis said he had set a tentative date of July 28 for receiving bids on construction of a 500-car underground parking garage at Front and Monroe streets, and that a second garage capable of handling 2,000 cars was under consideration by the City Commission.

In Jacksonville, a special committee is studying the possibility of an un-



The 195-DLC Medium Speed Diesel, manifold side, showing intake and up-exhaust manifolding; waste-packed lubricating oil filters; 12-volt pivot-mounted belt-driven generator; fuel supply pump; water pump by-pass, and foot-type flywheel housing.

195-DLCA High Speed Diesel, injection side, with pump mounted governor and fuel supply pump, fuel filter, water pump, single orifice pintle-type nozzles, drawn steel injection tubing of uniform length, 12-volt starting motor, vibration dampner, arm-type flywheel housing.

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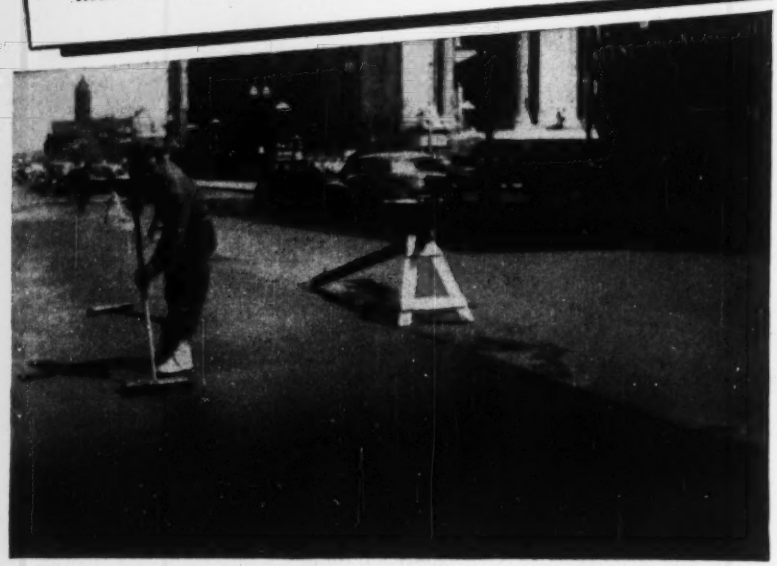

Jennite J-16 being applied to City Bus Stop Areas to protect asphalt pavement from oil and gasoline dripage, water seepage and frost action.

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derground parking space at Hemming Park, while in Cincinnati underground facilities to be located beneath Court Street, running from Vine to Main streets, have been recommended to City Manager W. E. Kellogg by the Main Street Business Assn. Cincinnati's $8-million program also will provide for lots and open-decked garages at eight downtown sites.

• **And conventional**—Many cities are planning or are now building conventional-type parking structures in cleared properties.

F. and R. Lazarus and Co., a department store in Columbus, Ohio, has begun construction of a multi-level parking garage of steel and reinforced concrete. The four-level structure, with a capacity for 500 cars in its 140,000 sq. ft. of floor space, will occupy a full block and offer entrances or exits facing three streets.

The city council is expected to approve the use of a ramp-type garage building to occupy four lots in the downtown section.

Denver will build an off-street parking structure on five lots purchased by the city, to supplement two city-owned elevator-type buildings already under construction and scheduled for completion late this year.

Gov. J. C. Boggs of Delaware has signed into law a bill permitting Wilmington to borrow funds to be used by the Wilmington Parking Authority in proceeding with its first off-street parking facility. Under the bill, such funds would be returned to the city from project revenues.

Albuquerque, N. M., has created a five-member municipal parking authority empowered to establish and operate off-street parking facilities.

• **Other action**—Lowering real estate and tax values spurred a drive for a $1.5-million off-street parking plan in Canton, Ohio. Merchants, professional men and city officials last week approved appointment of a five-man committee to organize a corporation to finance 1,500 off-street, low-priced parking spaces downtown.

Give one more citation to American ingenuity—Chicago officials, in an effort to help small neighborhood groups which jointly rented small lots for parking, decreed unattended facilities exempt from licensing. Within 16 months 30 self-service commercial parking lots sprang up.

One operator charged with operating without a license, was freed by the city prosecutor when the "paid attendant" amendment was read to him.

Important savings at Eureka-Williams Corp. because

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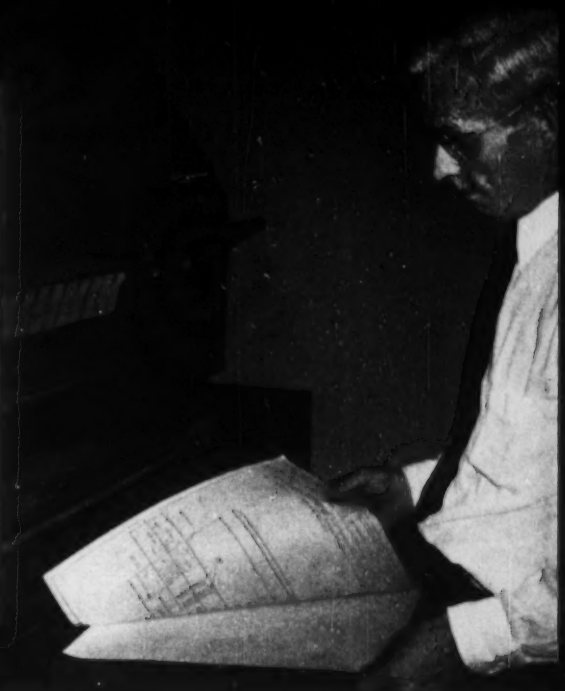

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2. The draftsman deletes the unwanted parts of this print with a razor blade.
3. From this, another Autopositive intermediate is made.
4. Then the draftsman only has to add the new design . . . and a new "file original" is ready. From it, additional Autopositives can be made for print production.

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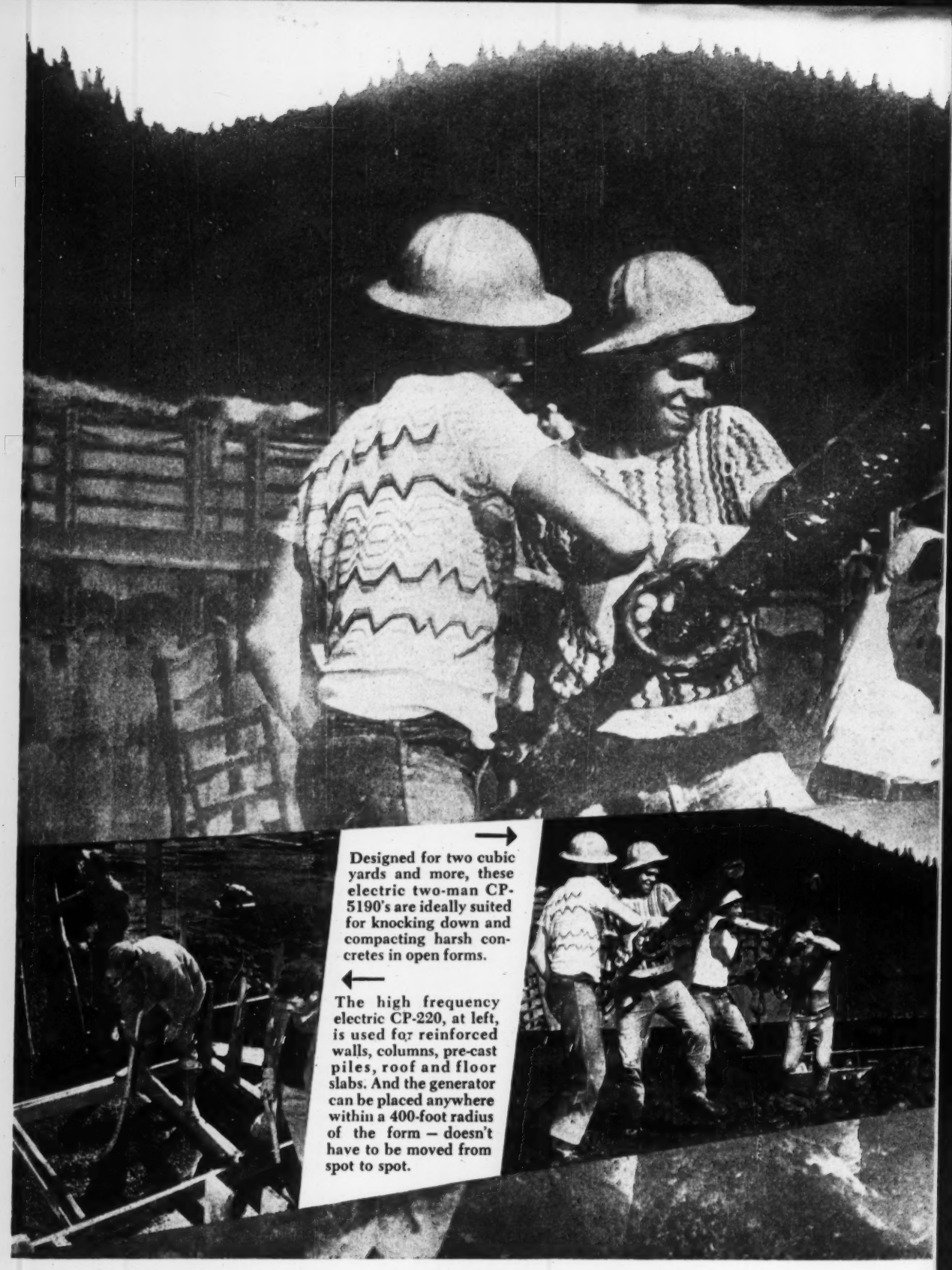
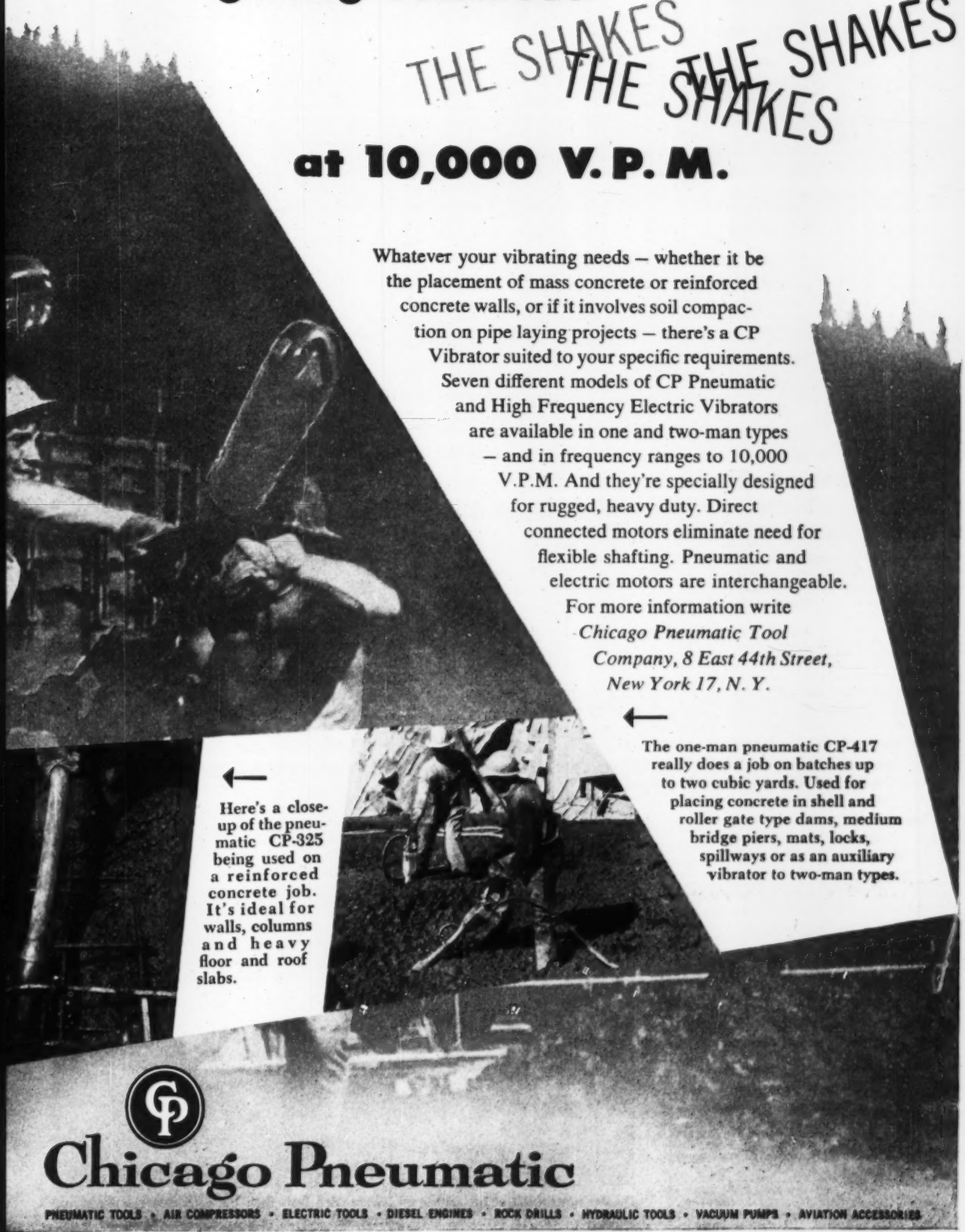


→ Designed for two cubic yards and more, these electric two-man CP-5190's are ideally suited for knocking down and compacting harsh concretes in open forms.

← The high frequency electric CP-220, at left, is used for reinforced walls, columns, pre-cast piles, roof and floor slabs. And the generator can be placed anywhere within a 400-foot radius of the form — doesn't have to be moved from spot to spot.

giving concrete THE SHAKES at 10,000 V.P.M.

THE SHAKES



Whatever your vibrating needs – whether it be the placement of mass concrete or reinforced concrete walls, or if it involves soil compaction on pipe laying projects – there's a CP Vibrator suited to your specific requirements. Seven different models of CP Pneumatic and High Frequency Electric Vibrators are available in one and two-man types – and in frequency ranges to 10,000 V.P.M. And they're specially designed for rugged, heavy duty. Direct connected motors eliminate need for flexible shafting. Pneumatic and electric motors are interchangeable. For more information write *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*

The one-man pneumatic CP-417 really does a job on batches up to two cubic yards. Used for placing concrete in shell and roller gate type dams, medium bridge piers, mats, locks, spillways or as an auxiliary vibrator to two-man types.

Here's a close-up of the pneumatic CP-325 being used on a reinforced concrete job. It's ideal for walls, columns and heavy floor and roof slabs.

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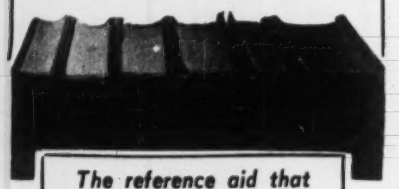

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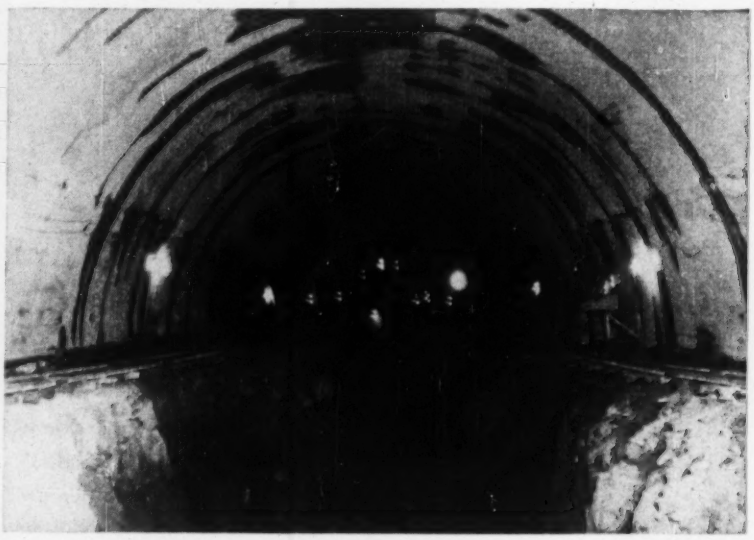


TUNNELING IN ROCK for new auto tunnel, circular concrete lining is placed in segments, starting at top of tunnel, as rock is dug away for lower sections.

Third longest vehicular tunnel to be completed in Japan in 1956

Between Honshu, the Japanese main island, and Kyushu, a smaller island at the south end of Honshu the third longest vehicular tunnel in the world is being cut through under the Shimonoseki Strait. The tunnel, to be known as the Kanmon Tunnel, is 2.15 miles long.

(The record vehicular tunnel is the 2.8-mile long Broadway Tunnel, Oakland, Calif., and the second longest is the Queensway, Liverpool, England, 2.2 miles.)

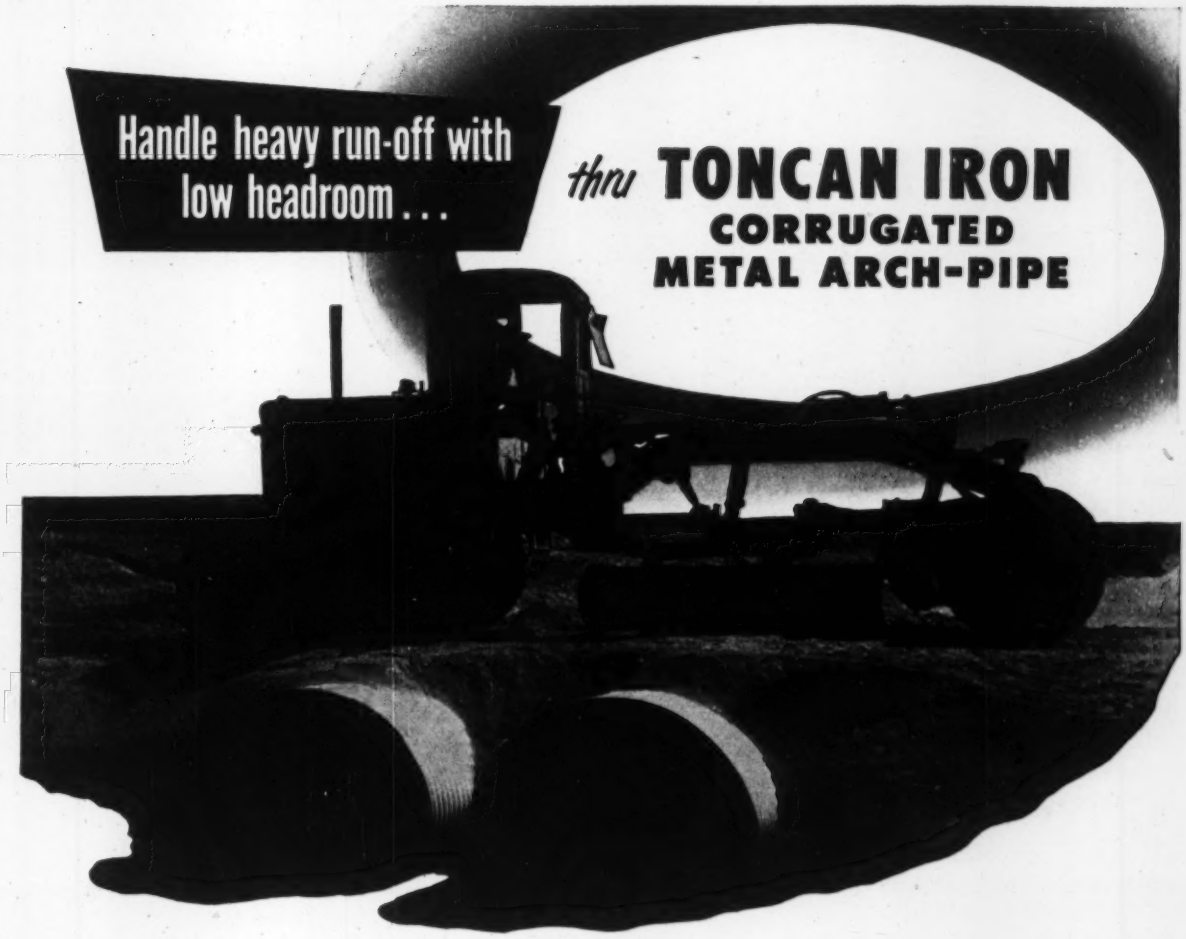
Begun in 1939 and discontinued in 1944 because of the war, work was recommenced on the Japanese tunnel in 1951, and completion is expected in 1956.

On the site chosen there is solid rock for almost the whole length of the underground structure. Boring through rock eliminated the necessity

PIONEER BORE at top of tunnel is excavated first, then the drift is dug out and top segment of circular concrete lining placed with curved forms.

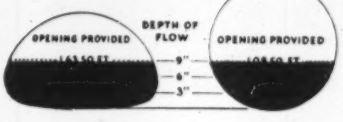
Handle heavy run-off with low headroom . . .

thru TONCAN IRON CORRUGATED METAL ARCH-PIPE



HERE'S HOW

Toncan Iron Corrugated Metal Arch-Pipe is able to handle a much greater volume of water than a full round pipe of equivalent size and cost. Note greater cross-section area of Arch-Pipe at each depth.



Where shallow fill encounters heavy run-off, solve both problems with the greater cross-sectional feature of Toncan Iron Corrugated Metal Arch-Pipe, diagrammed at left.

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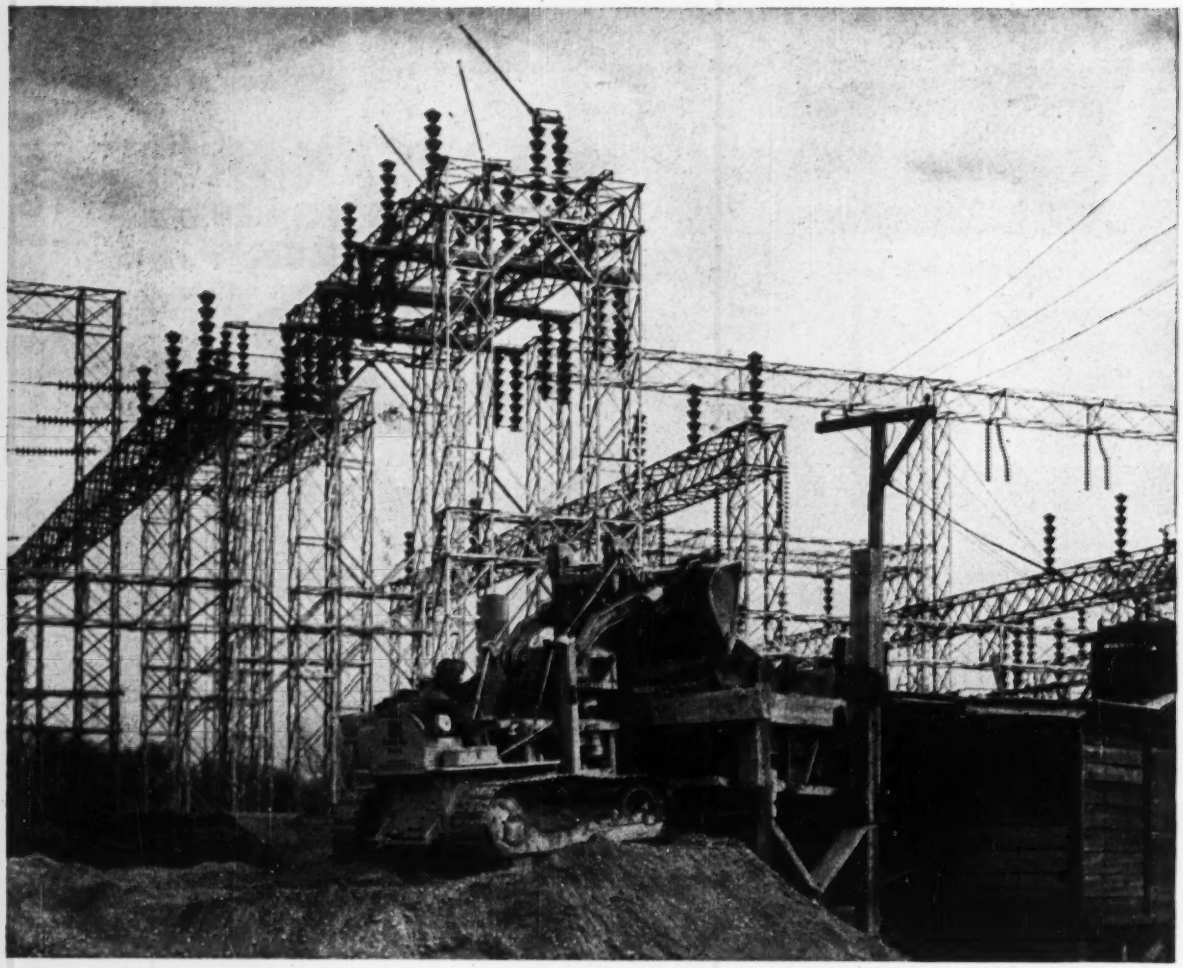

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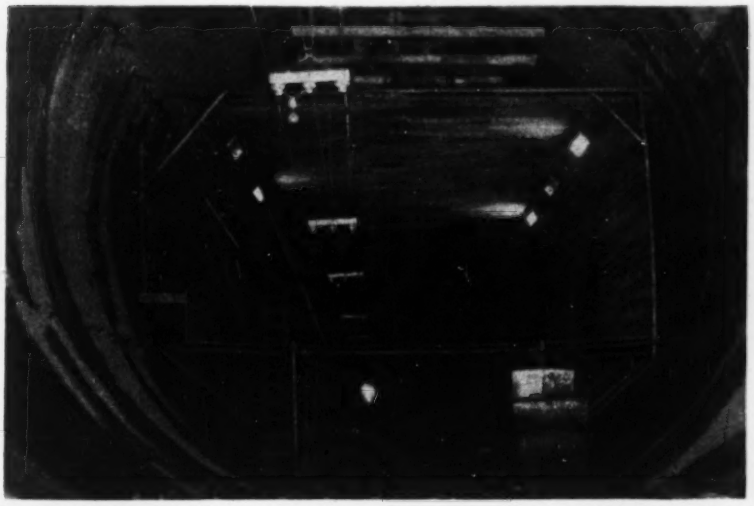
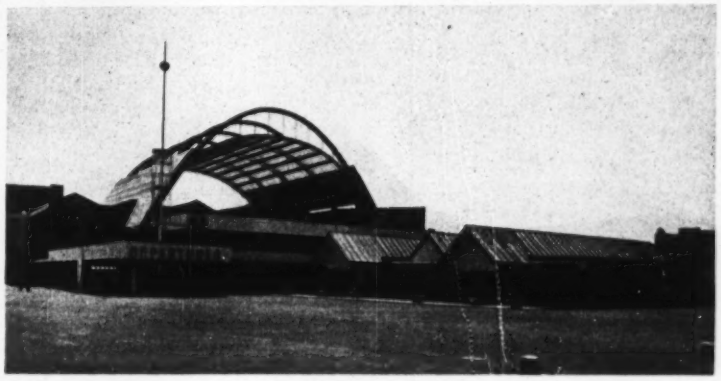


FIXED EXTERIOR FORM for roadway section will not be stripped. Electricians are fixing lighting inserts in form prior to constructing interior form for roadway. Note tiny locomotive, lower right.

for pneumatic caissons in the 2,500-ft section actually under water.

• **Construction of tunnel**—In almost all the excavation work a pioneer bore is started at the top of the tunnel's circumference. Rock is then taken out on each side of this top bore and the upper segment of the circular concrete lining placed against the rock behind curved forms. Work then progresses by taking out the rest of the rock in benches and placing the concrete lining in sections working



New air terminal met Coronation deadline

A new air terminal in London, England, was ready in time for the rush of Coronation traffic. Used by the British European Airways, the terminal comprises the steel-arched Waterloo Station Gate, erected for the Festival of Britain in 1951, with a new one-story extension added to it. The $240,000-extension and conversion of the Station Gate makes possible the handling of 2,000 passengers an hour on its 30,000 sq ft floor area.

Principal feature of the Station Gate is the series of high parabolic, wooden arches of built-up planks from which a glazed canopy is suspended by cables. The extension and roof-proper of the area under the wooden arches are framed in steel with reinforced concrete floors. Brick, stone, glass, and tropical woods are used to finish the interior and exteriors of the terminal. Architect for the Waterloo Station Gate and the new extension was Sir John Burnet, Tait & Partners of London, and structural engineer was A. E. Beer.

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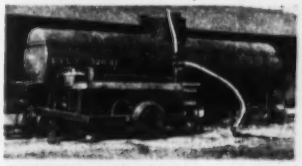
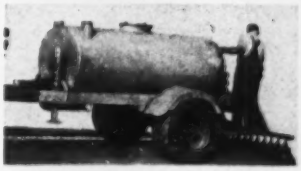
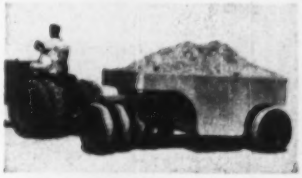


Rapid Fire circulating heaters heat and unload large tanks of asphalt.

Sheepsfoot Rollers 250 to 600 psi.



Rapidspray Maintenance Distributors. Also heaters for production melting of barreled asphalt.



Pneumatic rollers 7 to 50 tons.

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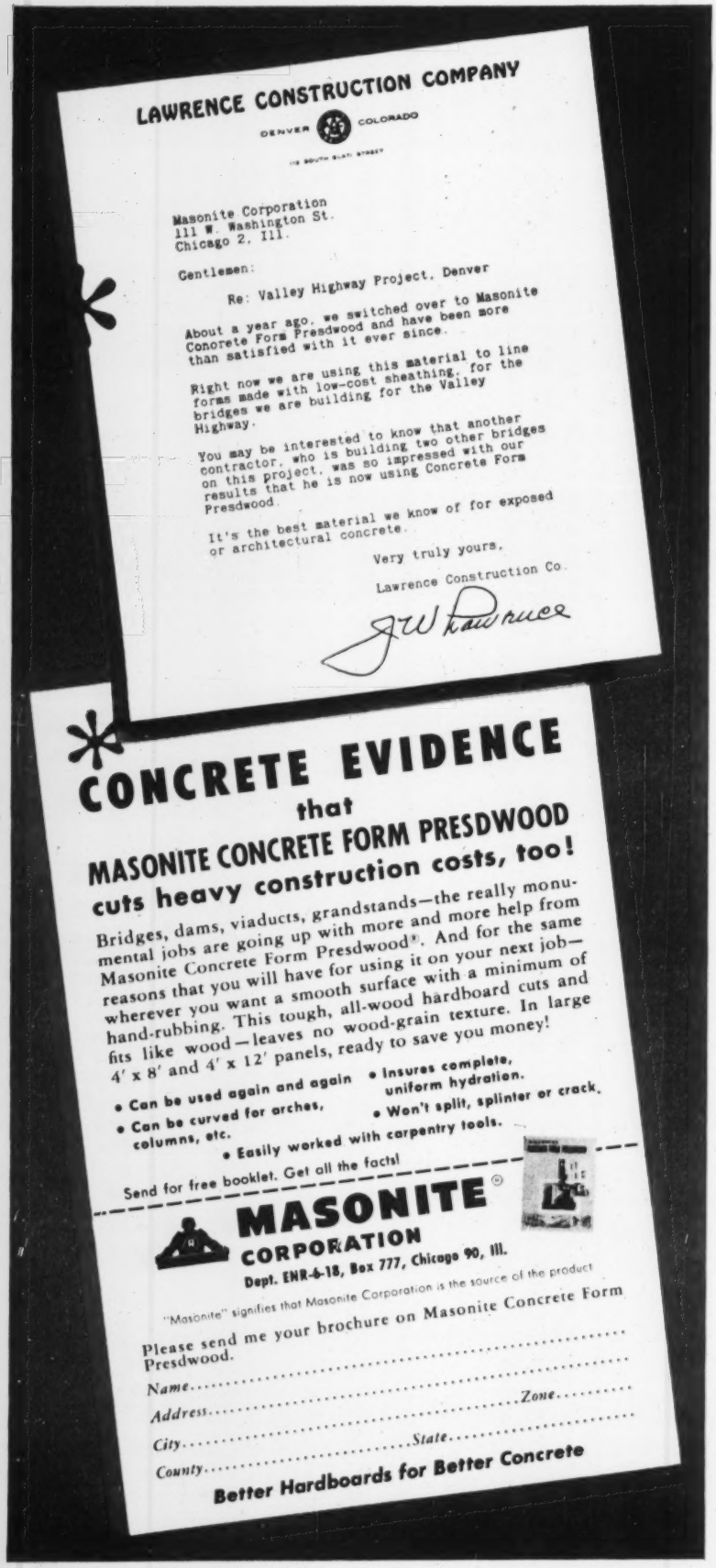
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You may be interested to know that another contractor, who is building two other bridges on this project, was so impressed with our results that he is now using Concrete Form Presdwood.
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Bridges, dams, viaducts, grandstands—the really monumental jobs are going up with more and more help from Masonite Concrete Form Presdwood®. And for the same reasons that you will have for using it on your next job—wherever you want a smooth surface with a minimum of hand-rubbing. This tough, all-wood hardboard cuts and fits like wood—leaves no wood-grain texture. In large 4' x 8' and 4' x 12' panels, ready to save you money!
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towards the bottom of the the circumference of the tunnel.

When this first circular lining is in place, a waterstop of sheet metal plates is welded in place against the first lining and a second circular lining of concrete placed against the sheet metal waterstop.

For the roadway walls a stationary exterior form is built with inserts for lighting fixtures and air conditioning. Columns are formed, for supporting the highway slab, under this roadway form, and the interior form for the roadway section is placed inside the exterior form. Concrete is poured starting at the base columns and working up to the roadway roof. After the concrete sets, the interior forms for the roadway are stripped, but the exterior forms for the most part are left in position, the space between the roadway walls and the tunnel lining behind is too small to allow the stripping of the forms.

Ventilating ducts will be carried both above and below the roadway.

There are four ventilation shafts for the tunnel, two on one side of Shimonoseki Strait and two on the other.

Thailand power

The International Bank for Reconstruction and Development has granted Thailand a loan for the construction of the Chainat irrigation dam. The project will include a 12,000-kw hydroelectric plant. Electric power is so short in Thailand that some stores in Bangkok provide their own electricity from gasoline engines sputtering on the sidewalks. To cure this situation the Thailand government hopes to develop a total, for the whole country, of 160,000 kw by 1957 with the construction of another dam at Tak. Two other hydro projects under consideration are expected to yield an additional capacity of 180,000 kw.

Russia building huge canals for irrigation, inland waterways

According to reports from the Russian press, work has started on a 700-mile canal across the hot, dry Turkman Desert east of the Caspian Sea. The canal will carry water from the projected Takhia Tash hydroelectric station on the Amu Darya River westward to Krasnovodsk on the Caspian Sea. The project will irrigate 3,200,000 acres of land on the Kara Kum desert and make an additional 17,300,000 acres available for pasturage.

Reportedly, trucks and dredges will have hermetically sealed cabins for

construction work in the summer months on the Turkman desert. In summer sand temperatures in the desert reach 170 deg Fahrenheit with air temperatures rising as high as 120 degrees.

A shorter canal, the Volga-Ural, is reported under construction to the north of the Caspian Sea. Connecting the Volga and the Ural rivers, this 380-mile canal will cross the arid Kasakh steppe and irrigate 20,000,000 acres of land with Volga River water. Four rivers traversing the canal route will pass beneath the Volga-Ural canal which is also to be used as a shipping artery.

The Soviet press claims that the new canal, together with its more than 1,250 miles of irrigation channel and its reforestation program, will so increase the humidity of the lower strata of air that the Kazakh steppe will become humid and mild rather than arid and hot.

Pakistan hydro project to bolster land's economy

Pakistan's plan to increase her electric power from 80,000 kw to 500,000 kw by 1957 is the temporary victim of a current economic crisis caused by two bad crop years and slumps in cotton and jute prices. However, one major project is under way at present.

Bids will be asked late this year on four 40,000-kw turbines for the $57-million Karnafulli hydroelectric project in East Pakistan. Ten thousand men are working on this project, begun last fall, to be completed in five years.

Located on the Karnafulli River 35 miles north of Chittagong in East Bengal, the dam will be earth-fill and rock-faced. It will be 120 ft high and 1,700 ft wide, and sloping in thickness from 867 ft at the bottom to 25 ft at the top. The vertical lift is 100 ft while the maximum discharge will be 400,000 cfs, the minimum 5,000 cfs.

Flood discharge will be handled by two spillways on one side of the dam. Model testing is in progress to determine gates and designs which are to be used.

The 160,000 kw generated will provide electricity for the southern half of East Pakistan. It is expected that 1,000,000 acres of land will be irrigated by pumps operated with the cheap power. Expansion in the industrial city of Narajangunj is likewise foreseen. Over 100 miles of navigational facilities would be improved, allowing for a tenfold increase in the extraction of forest produce.

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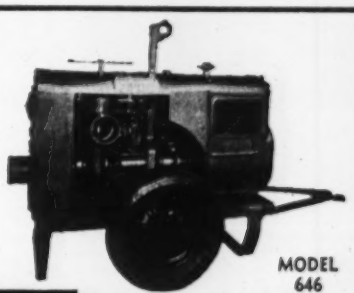

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"A CENTURY OF PROGRESS AND QUALITY CASTINGS"

MEN AND JOBS

FORD KURTZ: new president.

H. P. JACKSON: v.-p. for construction.

J. G. White Engineering Corp. completes executive changes

The J. G. White Engineering Corp., of New York City, has completed a reorganization of its top executive staff that became necessary on the death of Gano Dunn in April. Mr. Dunn had been both board chairman and president of the engineering firm.

Soon after Mr. Dunn's death the corporation announced that Edward N. Chilson, 76, had been named board chairman, and that Ford Kurtz, who is 68, had been appointed president. Now J. G. White Engineering has announced that Harold P. Jackson had been chosen vice-president in charge of construction, and Robert H. Barclay vice-president in charge of engineering. Walter S. Finlay remains as executive vice-president.

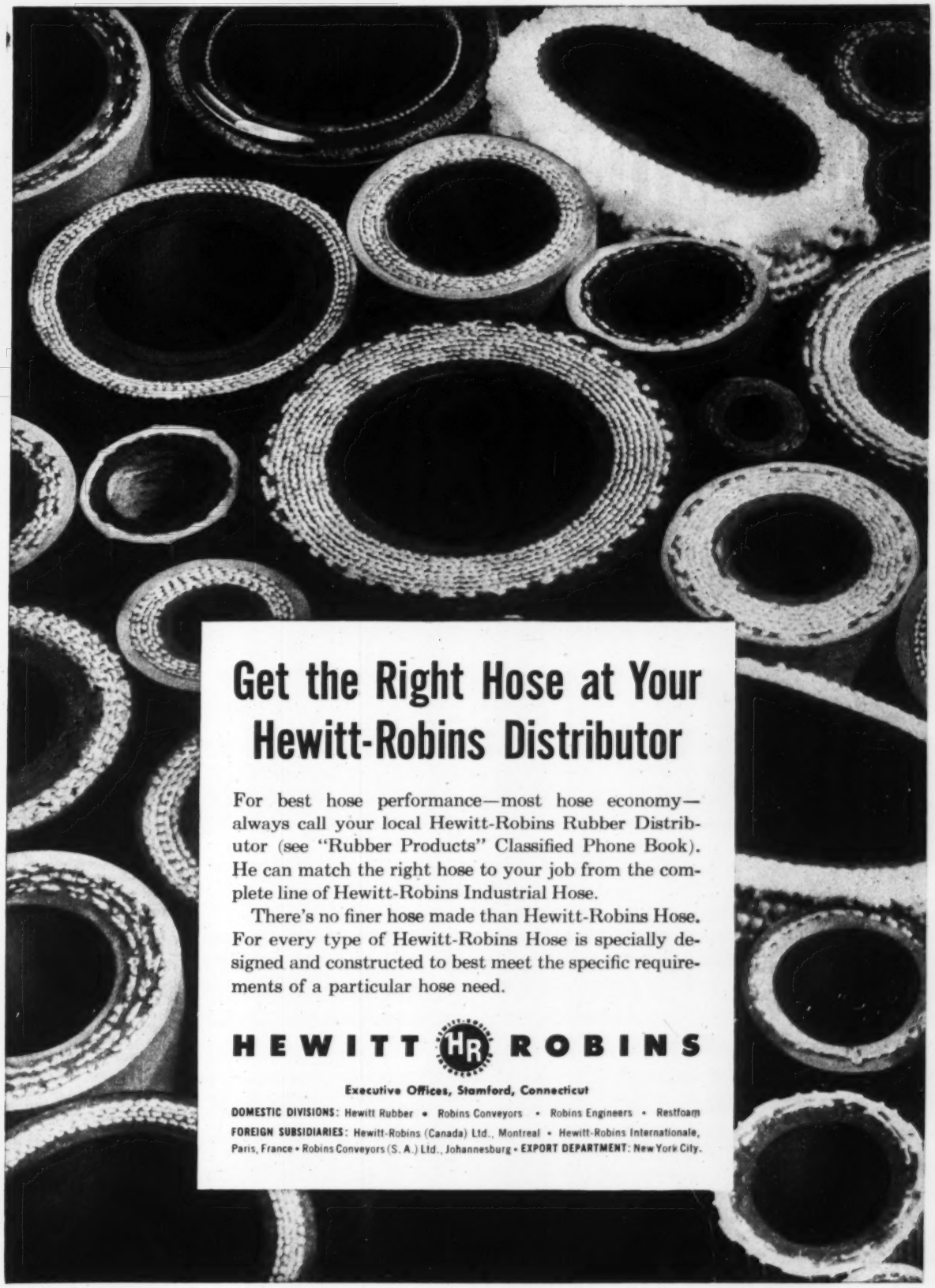
Chilson has been a vice-president since 1923, and has been with the company since it began. Kurtz has been vice-president in charge of engineering since 1949, and before that was engineering manager and hydraulic engineer. His professional career has been devoted principally to the practice of hydraulic engineering, particularly in the field of dam design and construction. According to J. G. White Engineering, Kurtz designed the first vertical shaft or "morning glory" spillway constructed in the U. S.

• **Kurtz was in charge** of hydraulic design on the Oak Grove development in Oregon, the Great Falls development in Tennessee and other plants, and has acted as a consultant on many other projects, including the Svirstroi Dam in Soviet Russia and the Lake Tsana storage project in Ethiopia.

Since taking over as J. G. White's engineering manager in 1940, Kurtz supervised engineering of many projects. Among them: the power plant for the Brooklyn Navy Yard, completely reconditioned during World War II, power, water, and other utilities for the Amuay Bay Refinery of Creole Petroleum Corp. in Venezuela, and the extension to the municipal power plant of Jamestown, New York. He is a member of the executive committee of the U. S. Committee on Large Dams of the World Power Conference.

Harold P. Jackson, new vice-president in charge of construction, has been manager of the construction department since 1941, and previously was project manager and construction superintendent on many big projects in the U. S. and abroad. Among them were a complete oil refinery at Port Jerome, France, the Boling Dome plant of the Texas Gulf Sulphur Co., and steam generating stations in Pennsylvania, Kentucky, and New York. He organized and administered a wartime construction program of multi-million-dollar projects on which over 13,000 workers were employed at one time.

Robert H. Barclay has been manager of the engineering since 1950. He joined the firm as chief electrical engineer in 1941. Previously he was with the Federal Power Commission.



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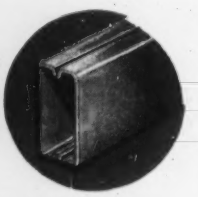
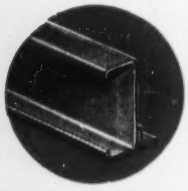


2 "C" Sections

"C" Section



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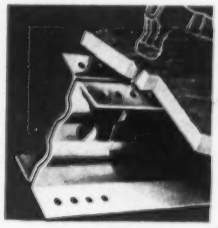

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General Feringa retires, takes utility post

Another Corps of Engineers general has retired to take a civilian job. He is Brig. Gen. Peter A. Feringa, division engineer for the Lower Mississippi Valley Division and for the last four years president of the Mississippi River Commission. Feringa (Maj. Gen., Ret.) started last week as assistant to the president of New Orleans Public Service, Inc.

Gen. Feringa, 57, received a civil engineering degree at Lehigh University, with time out for World War I service in the infantry. After graduation, he was commissioned in the Corps of Engineers, has since served 22 years on flood control and river-and-harbor assignments.

He has been district engineer at Jacksonville, Fla.; assistant to the chief of the river and harbor division, Office of the Chief of Engineers; district engineer at Savannah, Ga.; twice resident member of the Board of Engineers for Rivers and Harbors, in Washington; and 1946-1949, Assistant Chief of Engineers for Public Works.

In earlier Washington assignments, General Feringa did pioneer work in connection with basin-wide plans for flood control, which became law in the

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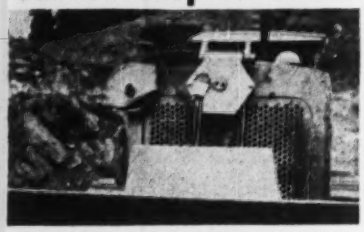

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Tuffy Dozer Rope is specially constructed with the extra stamina needed to stand up under the rough dozer treatment. But Tuffy engineers went even further to cut your costs! They devised a special reel to carry 150′ of Tuffy Dozer Rope on the tractor. When 10′ or so of rope is crushed or cut on the drum, you just feed enough from the reel to replace the damaged part! The cut can be made and the machine back in use in 15 to 20 minutes—less than half the time normally needed! Figuring roughly, there are two Dozer Ropes to a reel. This gives you an approximate ratio of 6 to 2 . . . about 300% increased service! Mount a reel of Tuffy Dozer Rope just back of the wedge socket on your Dozer and see how much longer service you get! ½" rope, furnished in 150′ reels.

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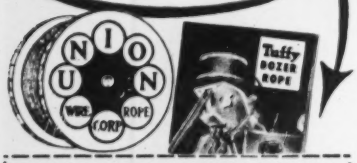

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C-9

MEN AND JOBS

1936 and 1938 Flood Control Acts. Since that time he has had a leading role in the formulation of practically all flood control and river-and-harbor legislation, and has thus become a familiar figure on Capitol Hill.

Gregory retires:
44 years on rivers

The Army Engineer Corps' top civilian engineer in Louisville, Ky., Whitney I. Gregory, is quitting government service this month after a 44-year career in the transforming of American rivers into navigable waterways.

Gregory will put away his slide rule June 30 to devote more time to his family of six children and eight grandchildren.

He was fresh from the civil engineering school of the University of Missouri when he went to work for the government in 1909 as a surveyman. His first assignment was with a survey party that studied the locks and dams on the Ohio River and later drew up the first navigational charts for the river.

Gregory progressively moved up to recorder, chief of surveys and chief of the engineering division. He was in charge of construction of Navigation dams 44 at Leavenworth, Ind., 52 at Brookport, Ill., and 53 at Grand Chain, Ill. He became chief civilian engineer for the Louisville District in 1931.

Over the years his assignments involved the spending of about $500,000,000 on military projects ranging from Army barracks to airports and ordnance works.

He recalls that the first dams built on the Ohio were designed to accommodate large-volume coal shipments from the Pittsburgh area to the lower Mississippi. Today the coal movement from Pittsburgh is over and petroleum is the chief commodity in river trade.

And in the future, Gregory claimed, dams on the Ohio are going to have to be rebuilt to handle the increasing flow of chemicals in river traffic.

"We think we've done a lot in the last 40 years, but we haven't seen any end of the location of plants and their utilization of water transportation. Improvements of the river and a greater navigation depth are necessary. The progress of the country is going to demand it."

Gregory is a former president of the Engineers and Architects Club of Louisville and is an active member of the Propellor Club.

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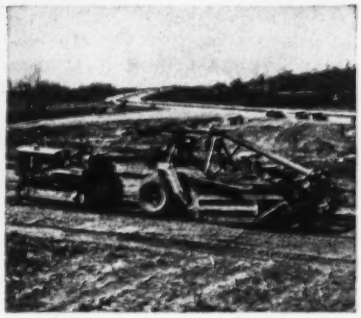

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Says Owner of a Middlewestern Construction Company

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From his records of yardage and service life, this Nebraska construction company owner learned that he could save nearly 50% on scraper rope costs by switching to Tuffy! And there's a good reason why: Tuffy is specially made to stand up under the stresses and strains of wheeled scrapers. It's flexible to withstand more sharp bending and to wind snugly and smoothly on the drums. It is designed to resist drum crushing caused by cross-overs. And Tuffy is easy to order — just specify length, diameter and "Tuffy."

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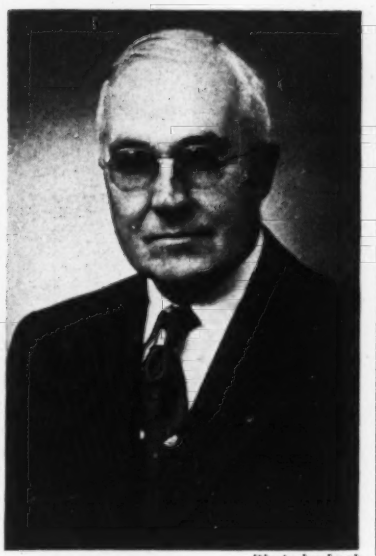


Photo by Lock

L. W. MAHONE—Land survey consultant.

Consultant in surveying

Leslie W. Mahone (picture), who lives in Clear Lake, Iowa, offers a rather unusual service. He recently hung out his shingle as a consultant in land surveying.

Mahone thinks his 30 years of theoretical and practical experience will be useful in a number of different ways. He sends out a brochure describing some of the possible applications:

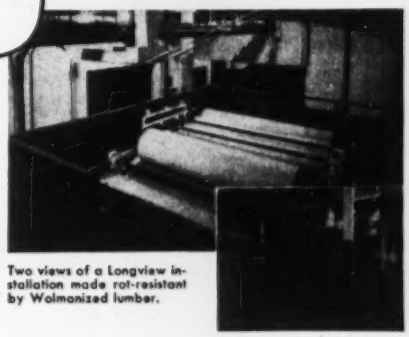
Lawyers need a consultant in cases of boundary litigation, in interpretation of complicated land descriptions sometimes found in abstracts of title, and in preparing land descriptions so that they actually describe the intended land parcel. Consulting engineers who don't find it practicable to have anyone on their staff especially expert in boundary determination could call on a consultant. In local government jurisdictions where the county, town, or city engineer is not licensed as a land surveyor, he can use a consultant.

Careers . . .

• **Appointed**—George M. Williams has been appointed division engineer for the Bureau of Public Roads. He has jurisdiction over five states, with headquarters in Denver . . . **Mike Miller** has been put in charge of all activities connected with joint-venture work in which Kaiser Engineers Division of Henry J. Kaiser Co. is interested. He has been vice-president of Kaiser-Frazer Corp. at Willow Run, Mich.

(*Continued on page 68*)

This Everett, Wash. tank of Wolmanized lumber will last for years



Two views of a Longview installation made rot-resistant by Wolmanized lumber.

How Weyerhaeuser Timber Co. Uses Wolmanized Pressure-Treated Lumber

In its Longview and Everett, Washington plants, the Pulp Division of Weyerhaeuser Timber Company is experiencing the value of Wolmanized pressure-treated lumber.

Pulp production's just about the "wettest" wet process there is. One that would cause ordinary lumber to soften in a matter of months. Over sixteen years ago Weyerhaeuser used Wolmanized pressure-treated lumber in their Longview plant for the first time. In spite of decay-producing moisture, that first Wolmanized installation is still in good condition, still giving Weyerhaeuser service. And now the newest mill in the industry Everett, Washington, is being rot-protected by Wolmanized tanks, process equipment, and structural lumber.

Wolmanized lumber's resistance to rot is largely due to the fact that Wolman preservative solutions are *forced* deep into the fibers of the wood by high pressures . . . not just brushed on or soaked in. And Wolmanized pressure-treated lumber is odorless, non-oily, clean, and completely paintable.

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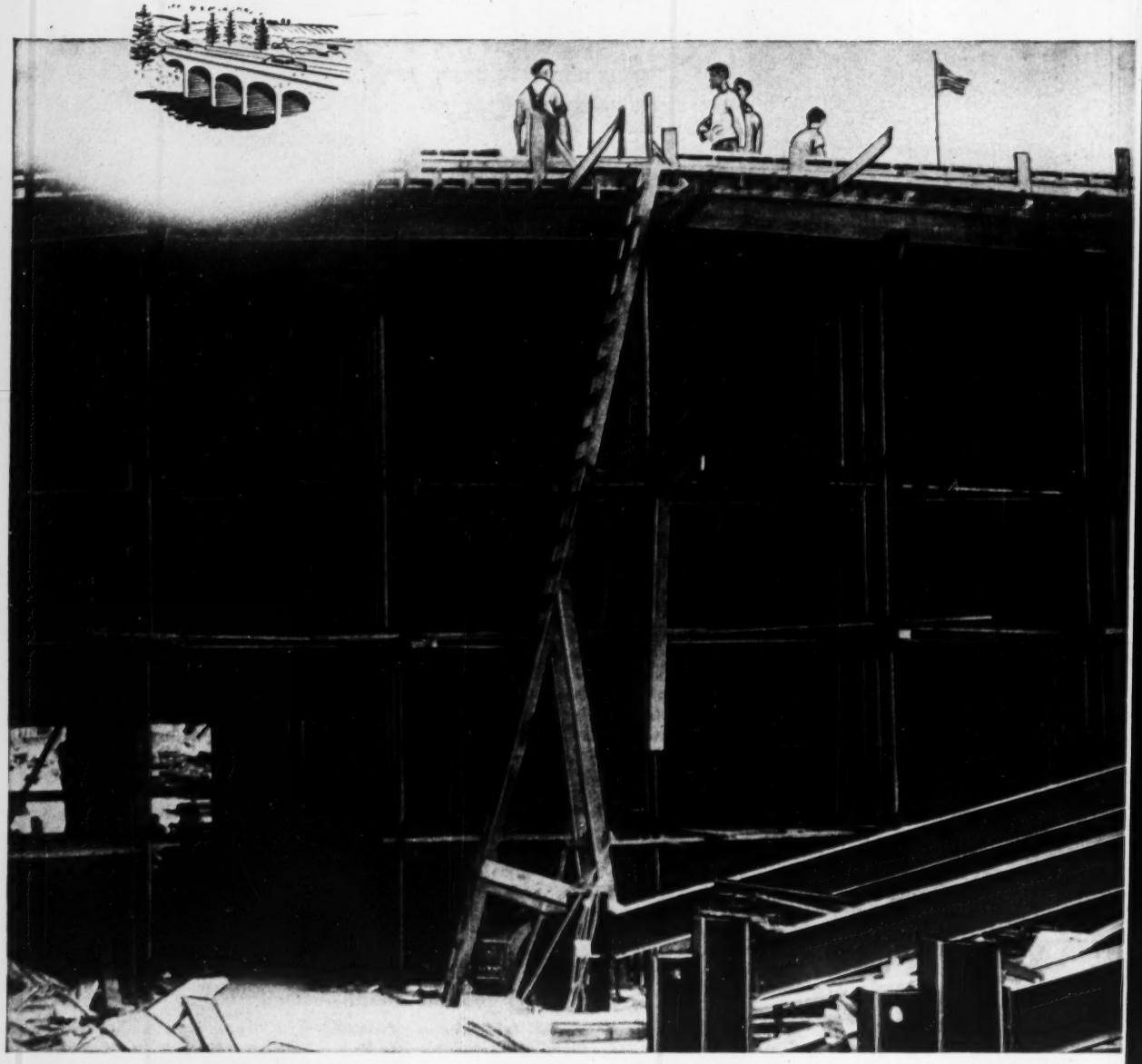

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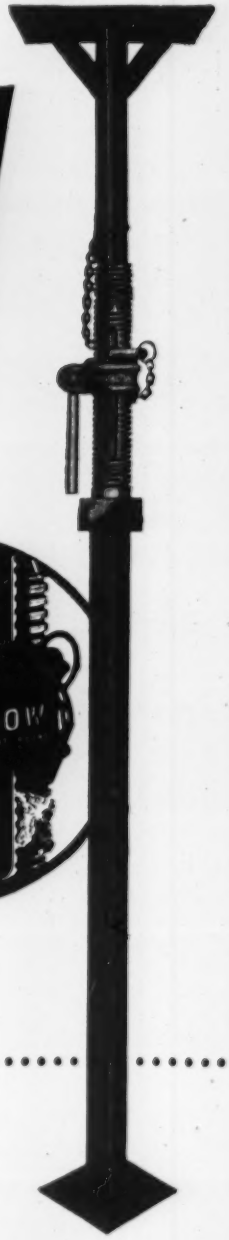

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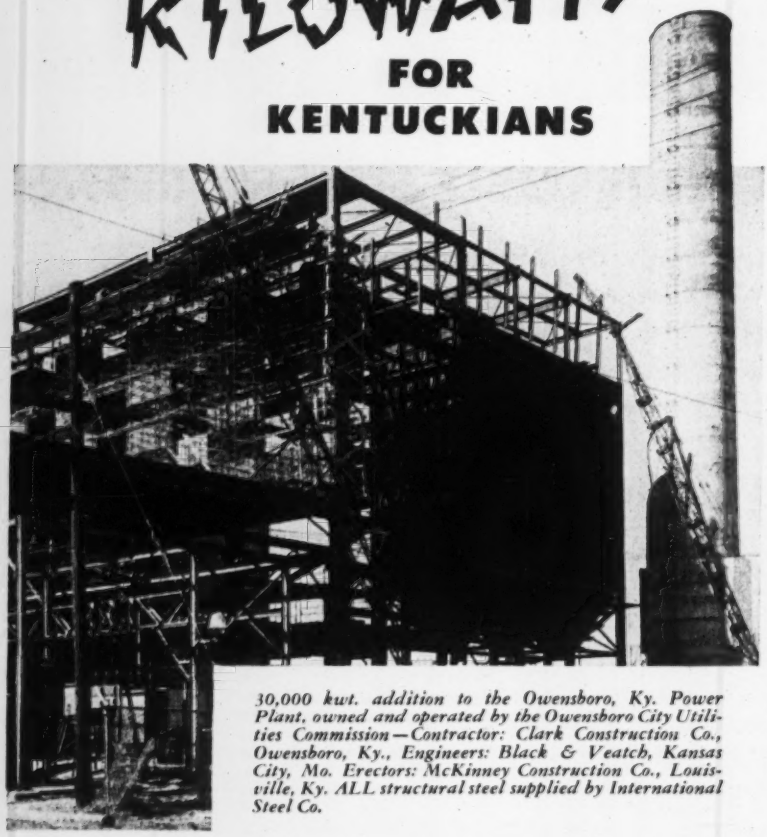

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MEN AND JOBS

. . . **J. Robert Potter** has been made vice-president of Lockwood Greene Engineers, Inc., New York City . . . **Joyal R. Morton** has left his job as chief civilian construction engineer for the Sacramento district, Army Engineer Corps, to become a special adviser on construction problems for Morrison-Knudsen Co., Inc. . . **H. J. Dickinson,** project engineer for the completed Isabella Dam on Kern River in California, has become chief engineer of Halverson Construction Co., of Seattle, Wash., on the Tecolote Tunnel project near Santa Barbara, Calif. . . . **W. Brewster Snow,** associate professor at Duke University's College of Engineering, becomes on July 1 professor of civil engineering and chairman of the Rutgers University civil engineering department . . . **Karl S. Geiges** has become chief engineer of Underwriters Laboratories, Inc.

• **Local government appointments**—**Kirby Olds** has become road design engineer of the Wyoming Highway Department, succeeding **Ross G. Stapp,** who heads the newly created construction and maintenance division . . . **Harvey O. Banks** has become assistant California State Engineer in charge of water rights administration, while **Leslie C. Jopson** becomes principal hydraulic engineer in charge of water rights applications, water master service, and water rights adjudications . . . **Felix L. Webster** has become city engineer at Thomasville, N. C.

• **Elected**—**S. Eberly Thompson,** vice-president of M. & M. Woodworking Co., of Portland, Ore., has been elected president of the Douglas Fir Plywood Association . . . **R. M. Hardy,** dean of the University of Alberta engineering faculty, has been elected president of the Dominion Council of Professional Engineers . . . **Edward J. Morris** becomes president of the Engineers Club of Baltimore.

• **Retired**—**Lester Gurney,** construction manager of the New England Power Service Co., of Boston, has retired and opened offices as a consulting construction engineer . . . **G. M. Blackstock,** for nearly 14 years chairman of the Alberta provincial public utilities commission, retired this month.

• **Honored**—The National Society of Professional Engineers is presenting its NSPE award to **Charles F. Kettering,** eminent automotive engineer. This is the third time NSPE has offered this award.

here it is

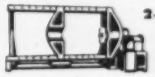
Rodgers new 3 in 1

OPEN YOKE PRESS

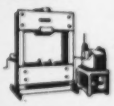
Here is an all-around press available in 100, 200, 300 and 400 ton capacities. It incorporates features that could be found only on standard shop and platen presses. Now at the price of one press you can perform the work formerly done by three.

Performs the work of three separate presses!

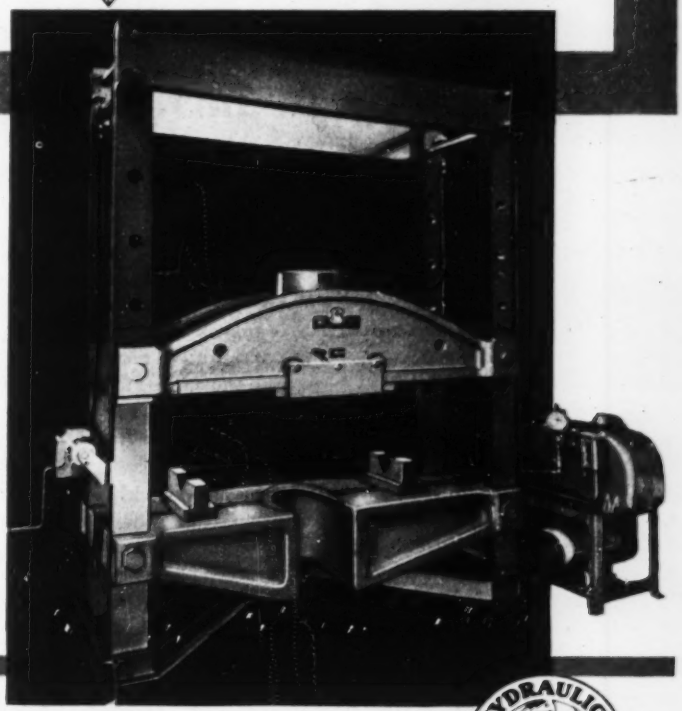
1—SHOP PRESS . . . Incorporates all of the features of the best standard shop presses.



2—FORCING PRESS . . . Practically every job that can be done on a regular forcing press can be handled on this new press.



3—PLATEN PRESS . . . Full pressure can be applied across the entire width of the machined yoke bed.



Check these outstanding features:

- Yoke member bed machined over entire surface.
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- Wear collar supplied for inserting in yoke recess.
- Bed plate insert covers yoke recess to provide continuous flat working surface.
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- Clear, open ends permit entrance of long material.
- Choice of Hand Operated or Power Driven Hydraulic Pumps.
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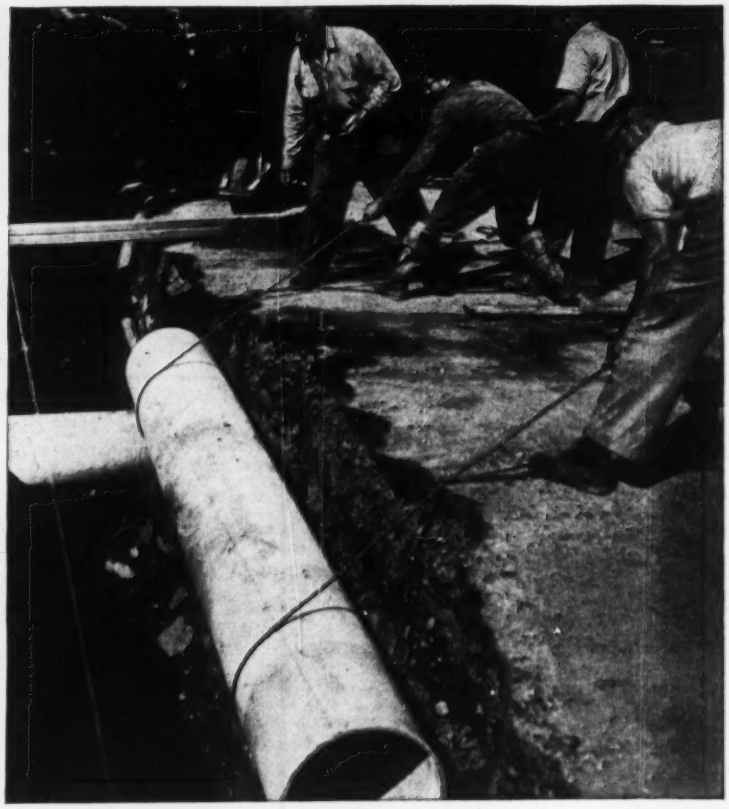
You can cut installation costs ... lay pipe faster... speed completion of entire job...



—Because of this RING-TITE JOINT used with Transite Sewer Pipe

Long 13-foot lengths of Transite* Pipe are rapidly assembled with the Ring-Tite Coupling. With it, dollars-and-cents savings will be realized every step of the way during construction of the line.

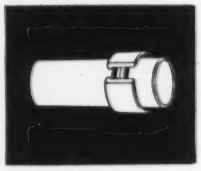
The 13-foot lengths reduce the number of joints and permit the pipe to be brought quickly and accurately to grade. Still more time is saved since each Ring-Tite joint can be checked as fast as it is assembled to reduce delays in backfilling and speed completion of the job.

LIGHT IN WEIGHT

Other time and money-saving advantages of Transite Sewer Pipe are found in its light weight and easy handling. These reduce trucking costs and pay off in simplified operation all along the line. And, too, the Ring-Tite joint eliminates the necessity for hot compounds and the time-consuming procedures that go with their use.

May we send you more facts about this asbestos-cement pipe and its Ring-Tite joint... and how they reduce infiltration to a minimum and cut other sewage costs as well? No obligation, of course. Please write for folder TR-103A. Address Johns-Manville, Box 60, New York 16, New York.

Why the RING-TITE JOINT cuts your sewage costs



Two rubber rings and Transite Sleeve (see cut-away view) can be assembled quickly over Transite Pipe ends to make a pressure-tight joint. These flexible joints effectively absorb vibration, help compensate for soil movements.

AND BUILDING SEWER PIPE, TOO! **Another J-M Asbestos-Cement Pipe, Transite Building Sewer Pipe, assures a tight sewer system throughout.** Many municipal officials are insisting that house and building connections to their sewage lines be made with Johns-Manville Building Sewer Pipe to assure tightness throughout their systems. This pipe also has the same type of rubber ring sealed joint that is shown above.

*Reg. U. S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE SEWER PIPE

OBITUARIES

Samuel J. Prinzi, 53, project manager in charge of three New York State Thruway projects for Johnson, Drake & Piper, Inc., of New York City, was killed in an automobile accident on May 29, near Buffalo Airport. A graduate of Notre Dame, 1922, Mr. Prinzi, was project manager and resident engineer on several jobs in Pennsylvania and New York during the last five years. Previously he was chief engineer with Mullett & Schneeberger of Pittsburgh, and for a time he was also with the Pennsylvania State Highway Department.

Louis C. McCann, 70, general contractor in Albany, N. Y., died May 31. He was a graduate of Rensselaer Polytechnic Institute and had been supervising engineer for the Reconstruction Finance Corporation on several major industrial projects in New York State.

Ardie Ranson Hunter, 72, engineer with the Carolina Steel and Iron Company at Greensboro, N. C., for 24 years, died June 5.

Martin Koenig, Jr. 63, Baltimore, Md., structural engineer, died June 2 enroute to Hawaii. Mr. Koenig had been a member of the firm of Kubitz & Koenig, consulting engineers, for more than 30 years. He acted as consulting engineer in the construction of many well-known buildings in Baltimore, including the University Hospital, the May Company and a number of public schools in the city of Baltimore. He was a graduate of the School of Engineering of the University of Maryland.

Sam A. Nixon, 52, design engineer for the Soil Conservation Service at Ft. Worth, Tex., died June 3. He was a graduate of Texas A & M College and had worked for the U. S. government for 20 years.

Vincent LaMorticella, 66, a building contractor in Niagara Falls, N. Y., died June 3. He was in the general contracting business in Niagara Falls for 40 years.

Raymond F. Weller, general engineer for the Denver office of the Civil Defense Administration, died recently. He was the first chief of the Nebraska Safety Patrol and was chief highway engineer for that state when he resigned to take the Civil Defense post a year ago.

NEW DRIVE-IT 320
with
BREAK-OPEN ACTION

MAKES SPLIT-SECOND FASTENING TO CONCRETE OR STEEL... EASIER THAN EVER

BREAK-OPEN ACTION for fast, easy loading and extraction makes new **DRIVE-IT** "320" the easiest operating stud driver on the market. This smooth-working action means a greater saving to you on concrete or steel fastenings.

Here are other exclusive **DRIVE-IT** features that make it the best tool available:

ONE POWER LOAD. No need to buy and stock various strength power loads with exclusive **DRIVE-IT** power control method.

AUTOMATIC EXTENSION BARREL allows fastenings inside junction boxes and other recesses. No need to buy and attach extra barrels.

SWIVEL SAFETY PAD of tough rubber and steel protects operator and permits fastenings next to walls.

SAFE two-handed firing sequence and length of tool offer maximum protection. Can't be discharged accidentally or in mid-air.

DRIVE-IT pins are listed and approved by Underwriters' Laboratories.

DRIVE-IT
the original
POWDER ACTUATED TOOL

MAIL NOW FOR MORE INFORMATION

POWDER POWER TOOL CORP.
0716 S. W. Woods St. Portland 1, Oregon

☐ We would like a free demonstration of DRIVE-IT.
☐ Please send literature on new DRIVE-IT 320.

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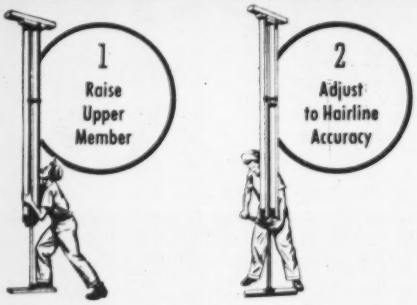
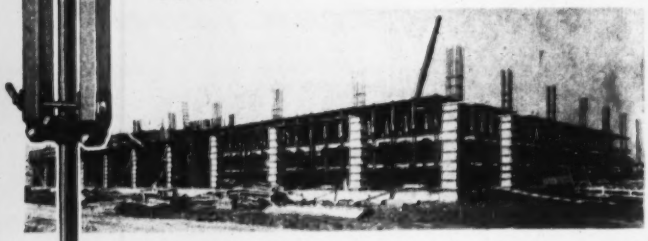
CONTRACTORS KNOW . . .
they get FASTER SHORING
WITH **ROOSHORS**



Rooshors help speed your progress schedules. They are easily set . . . instantly and accurately adjusted to any fraction of an inch by one man. There are no loose pins and no screw adjustments to become clogged. They have longer adjustments in their ranges of three sizes: 8 ft. to 14 ft.; 7 ft. to 13 ft.; and 5 ft. to 9 ft. . . . higher stories are shored with

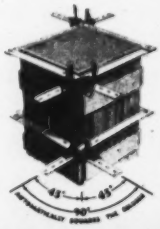
ROOS EXTENTION SHORES

Roos Extension Shores are standard adjustable Rooshors with a flat steel head into which any length S4S 4 x 4 can be instantly inserted in the top of the Shore to take care of heights over 14 ft.



Rooshors have been used by contractors from coast to coast for over 35 years. More Rooshors are in use than any other adjustable shore!

ROOS COLUMN CLAMPS



Roos Column Clamps, consisting of two identical hinged units, eliminate waste time and motion in fitting and adjusting. They are foolproof, there is no wrong way to put them on . . . no loose parts to cause needless delays and a hammer is the only tool needed.

WRITE TODAY FOR BULLETIN 353

Rooshors and Roos Column Clamps are available for rental with purchase option from warehouse stocks in principal cities.

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BOOKS

Reports and pamphlets

THE SLIDE RULE—The Macmillan Co., 60 Fifth Ave., New York 11, N. Y. $1.00.

ASTM STANDARDS ON LIGHT METALS AND ALLOYS—American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.00.

COMPACTION OF EMBANKMENTS, SUBGRADES, AND BASES—Bulletin 58, Highway Research Board, Washington 25, D.C. $1.50.

DISTRIBUTION OF LOAD STRESSES IN HIGHWAY BRIDGES—Research Report 14-B, Highway Research Board, Washington 25, D.C. $1.50.

REDUCING PHENOL WASTES FROM COKE PLANTS—Ohio River Valley Water Sanitation Commission, 414 Walnut St., Cincinnati 2, Ohio. $1.00.

MULTIPLE-PURPOSE RESERVOIRS AND POLLUTION CONTROL BENEFITS—Ohio River Valley Water Sanitation Commission, 414 Walnut St., Cincinnati 2, Ohio.

FLOODS IN LOUISIANA: MAGNITUDE AND FREQUENCY—Louisiana Department of Highways, Baton Rouge 4, La.

IMPORTANCE OF SECONDARY FLOW IN GUIDE VANE BENDS—Technical Paper No. 14, Series B, St. Anthony Falls Hydraulic Laboratory, Minneapolis 14, Minn.

MODIFICATIONS AND TEST OF RADIOACTIVE PROBES FOR MEASURING SOIL MOISTURE AND DENSITY—Technical Development Report No. 194, Civil Aeronautics Administration and Technical Development and Evaluation Center, Indianapolis, Ind.

STANDARDS—ENGINEERING TOOLS FOR INDUSTRY—Proceedings of the Third National Standards Conference. American Standards Association, 70 East 45th St., New York 17, N. Y. $2.00.

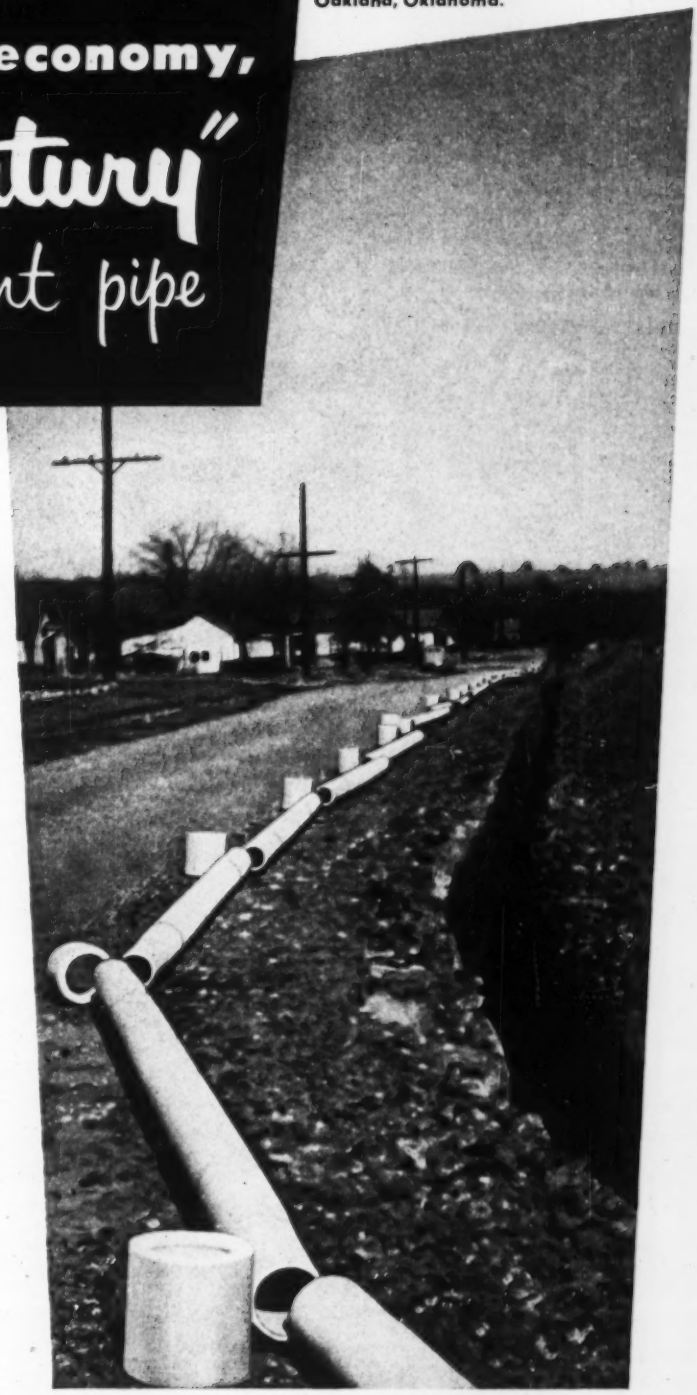
FIRE TESTS OF STEEL COLUMNS ENCASED WITH GYPSUM LATH AND PLASTER—Building Materials and Structures Report 135, National Bureau of Standards. Superintendent of Documents, Washington 25, D.C. 15¢.

SUGGESTED CLASSIFICATION OF MUSKEG FOR THE ENGINEER—Technical Memorandum No. 24, National Research Council of Canada, Ottawa, Ont.

INJURIES AND ACCIDENT CAUSES IN CARPENTRY OPERATIONS—Bulletin No. 1118, United States Department of Labor, Superintendent of Documents, Washington 25, D.C. 35¢.

For all-round economy, specify "Century" asbestos-cement pipe

"Century" pipe, 4" Class 150, ready for laying in trench in Oakland, Oklahoma.



Every community is interested in saving money—which is why so many decide on water mains of "Century" pressure pipe!

Right from the first this sturdy piping helps keep costs low. Because it is light and easy to handle, work crews move and lay it more efficiently. The Simplex Coupling allows curves to be made economically and quickly up to five degrees at each joint.

And as the years pass, "Century" pipe stays economical. It keeps on serving at full flow longer because it cannot rust, will not tuberculate, and actually grows stronger with age!

If you should like more information about this economical pipe, write for your free copy of "Mains Without Maintenance"—an authoritative booklet containing data of value to anyone interested in water main pipes. Write today!

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Nature made asbestos... Keasbey & Mattison has made it serve mankind since 1873

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Loading sand on construction job.

PRODUCTION UP COSTS DOWN

Loading rock in Eastern quarry.

Tough loading jobs that incorporate loading of sand, rock, frozen ground, narrow passage ways, long hauls to discharge or any combination of disagreeable and hard to manage operations are easy for an Eimco.

These heavy-duty machines are at home in a rock pile — they'll load big or small trucks and operate in a space where no tractor can turn around.

Write for information on Eimcos, how they can load for you at unusually low cost and at a rate of 250 to 350 tons per hour.

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Construction job in frozen ground.

Satisfaction of architect

The court, in a recent case,[1] in discussing a contract requirement that the work must be done to the full and complete satisfaction of certain designated persons, stated: "This means satisfaction to a reasonable person. By the terms of the contract, the owner or others were not entitled to additional or further work not specified in the subcontracts."

In the case referred to above, a subcontract to do some painting work was involved. The work was defective, not because of any fault on the part of the contractor but because the specifications for the job were insufficient to accomplish a proper painting job.

The owner directed the general contractor to do some additional work not called for by the specifications which work he performed. The general contractor sought to hold the painting subcontractor liable for the increased expense in performing this additional work. The court held that since the subcontractor had performed the work pursuant to the specifications, he was not liable for any additional expense that the general contractor incurred in order to do a proper painting job.

"A contractor is required to follow the plans and specifications and when he does so he cannot be held to guarantee that the work performed as required by his contract will be free from defects, or withstand the action of the elements, or that the completed job will accomplish the purpose intended. He is only responsible for improper workmanship or other faults, or defects resulting from his failure to perform."

(1) Puget Sound Nat. Bank of Tacoma v. C. B. Lauch Const. Co., 245 P. 2d 800.

Additional compensation for performing contract

"The general rule is that a promise to do, or actually doing that which a party to a contract is already under legal obligation to do, is not valid consideration to support the promise of the other party to the contract to do additional work or to pay additional compensation for such performance. 'In other words, a promise by one party to a subsisting contract to the opposite party to prevent a breach of the contract on his part is without consideration.' . . . These are not construction contracts . . . where the refusal to perform on the contractor's part was induced by substantial and unforeseen difficulties, the performance of which would cast upon the contractor additional burdens not anticipated by the parties when the contracts were made. Neither are there here strong equitable considerations or unforeseen difficulties to explain the contractor's refusal to proceed under the original contract. . . . These are simple, definite and clear contracts without 'unforeseen difficulties' for the sale of a finished house. . . . As stated in Armstrong v. Stiffler. . . . 'Normally contracts are made to be performed, not to give an option to perform or pay damages. . . .' The oral contracts on which the declarations were founded, being without consideration, judgments were properly entered for the appellees."[1]

In the above case, the action was brought by the purchasers of a house against the sellers to recover damages resulting from breaches of alleged oral warranties made after the written contract was entered into. The written contract contained the following provision: "This contract contains the final and entire agreement between the parties hereto, and neither they nor their agents shall be bound by any terms, conditions or representations not herein written; time being of the essence of this agreement."

After the building was completed and accepted by the purchasers, the cellar became damp and wet and the action was brought to recover the damages resulting from said defects. The action was predicated on a claim that after the written contract was entered into, the sellers gave an oral warranty that the cellar would be dry and waterproof. The court held that there was no consideration to support the alleged oral warranties and that the same were unenforceable.

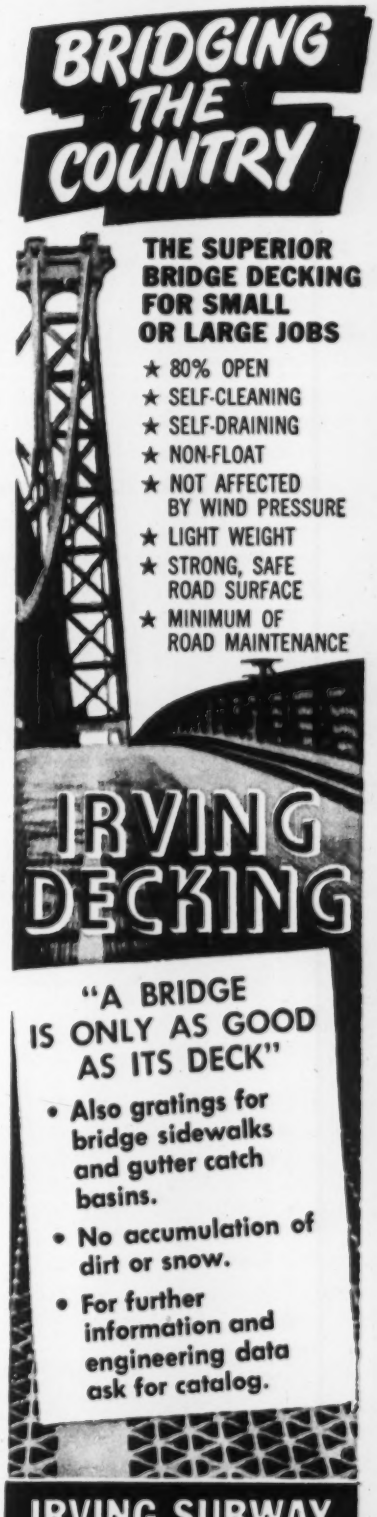
(1) Berger et ux. v. Burkoff et ux., 92 A. 2d 376, Court of Appeals of Maryland, Nov. 7, 1952.

Damages recoverable upon breach of contract

"The general rule of law is well settled that the measure of damages for breach of a construction contract is the reasonable cost of completion, and that in event of long and unreasonable delay damages for loss of use may, under some circumstances, also be awarded. . . ."

(1) Johnson-Johnson, Inc. v. Farah, 103 N.E. 2d 638, Appellate Court of Indiana, Nov. 21, 1952.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)


BRIDGING THE COUNTRY
THE SUPERIOR BRIDGE DECKING FOR SMALL OR LARGE JOBS
★ 80% OPEN
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"A BRIDGE IS ONLY AS GOOD AS ITS DECK"
• Also gratings for bridge sidewalks and gutter catch basins.
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IRVING SUBWAY GRATING CO., INC.
ESTABLISHED 1902
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Highway viaduct demonstrates **THREE**

Fir plywood solved complex form problem on Alaskan Way Viaduct. Double-decked structure .77 miles long required only 400,000 square feet of plywood.

KEY ADVANTAGES OF FIR PLYWOOD CONCRETE FORMS

Beam and girder bottom forms were built up inside standard vertical form panels in what contractor called "floating beam bottoms." System simplified handling of variable beam and girder depths.

1. TIME AND LABOR SAVINGS

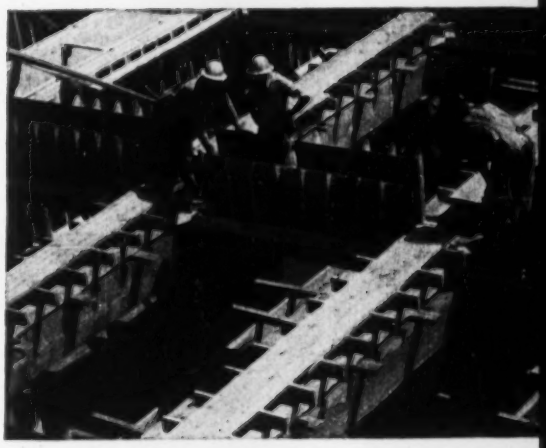
On this six-lane highway viaduct along the Seattle, Washington, waterfront, standardized re-usable plywood form sections helped complete the job months ahead of schedule. Exterior-type fir plywood was used to fabricate the form panels for beams, girders and roadway.

2. ECONOMY THROUGH RE-USE

About 400,000 square feet of ⅝" fir plywood was required for the .77 mile structure. Contractors reported an average of four re-uses. About 25% of the plywood forms gave seven to eight re-uses. In some cases forms withstood 10 uses. Other forms gave additional uses after re-facing with ¼" fir plywood.

3. SMOOTH, FIN-FREE CONCRETE

The smooth surfaces obtained with the plywood forms cut finishing to a minimum, the contractor reports. The only finishing work required was filling of tie-holes and beads, which were ground and sacked. Job Superintendent John Rumsey, Jr. says: "Fir plywood solved a complex form problem for us and speeded work all along the line."



Pattern of plywood forms for girders and cross beams is shown here. Standard panels for shallow cross beams and shallow center beams were not as high as those for girders. Contractor built forms for 660 feet of viaduct at a time.

SPECIFY DFPA INSPECTED FIR PLYWOOD

These registered industry trademarks are your guide, guard and assurance of DFPA quality-tested fir plywood manufactured especially for concrete form work. INTERIOR PLYFORM (highly moisture-resistant glue) gives multiple re-use, up to 12-15 are not unusual. For maximum re-use, specify EXTERIOR PLYFORM (100% waterproof glue). For special architectural concrete use fir plywood with "A" face veneer or one of the new plastic-surfaced or hardboard faced fir plywoods identified by this star and link industry hall mark of quality.

A Product of the Plywood Industry

For further information write Douglas Fir Plywood Association, Tacoma 2, Washington.

ALASKAN WAY VIADUCT
LOCATION: Seattle, Washington
CONTRACTORS: Morrison-Knudsen Co., Inc.
Rumsey and Company

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.,
ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Mass., Danvers**—B.A. 7/3—Cities Salem & Beverly, Salem-Beverly Water Supply Bd., c/o Salem City treas., 93 Washington St., Salem, 1,700,000 gal. reservoir, Putnamville Sect. from intersection Locust St. and Valley Rd. to Newburyport Turnpike, 250 acres, Danvers, $2,225,000. Plans deposit $50, Metcalf & Eddy, 1300 Statler Bldg., Boston, engrs. CD 10/9/51.

BIDS ASKED—BUILDINGS

▲ **Mass., Danvers**—MEDICAL AND INFIRMARY BLDG. —B.A. 7/2—State, Dpt. Mental Health, 15 Ashburton Pl., Boston, Pm-18 Contr. 1, medical and infirmary bldg., furnish, equip. $2,400,000. Plans deposit $150 refundable. Allied Engineering Corp., 71 Proctor St., Roxbury, supervision of construction. CD 2/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **S. & A. Allen Constr. Co.**, Inc., 9 Newbury St., Boston, Mass. CA. $994,408. est. $1,000,000. electronic and electric shop expansion, Naval Shipyard, Spec. 34827, CHARLESTOWN, MASS. First Naval Dist., 495 Summer St., Boston, Mass. CD 6/2, under LB.

▲ **C. L. Guild Constr. Co.** Inc., 94 Water St., East Providence, R. I. LB. $1,179,073. est. $1,200,000. Contr. 2-L, lateral sewers, EAST PROVIDENCE, R. I. Town, Bd. Sewer Comrs., Town Hall, East Providence, R. I. Charles A. Maguire & Assoc., Turks Head Bldg., Providence, R. I., engrs. Bids June 1.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Monarch Builders & Developers**, 516 Main St., Middletown, Conn. Owner Builds. est. $1,000,000. 150 RESIDENCES, BERLIN, CONN. Carl E. Segerberg, 363 Main St., Middletown, Conn., archt.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

N. Y., Brooklyn—HOUSING—B.A. 6/23—New York Housing Auth., 63 Park Row, New York, Zone 7, foundations and general constr.; heating and ventilating; electric; plumbing; furnish and install elevators for Brevoort Houses, Proj. No. NY-5-17, Sect. II, Incl. Bldgs. Nos. 7 to 13 inclusive, in area bounded by Brainbridge St., Ralph Ave., Marion St. and Patchen Ave. Plans deposit $75. $25 elevators. CD 2/2/51.

▲ **N. Y., Port Chester**—SCHOOLS—B.A. 7/2—City, Bd. Educ., Port Chester, three elementary schools, King, Olivia and Horton Sts., $2,000,000. Sherwood Mills & Smith, 65 Broad St., Stamford, Conn., archts. CD 5/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK** Bureau Contracts & Accountants, The Governor Alfred E. Smith State Office Bldg., Albany,

Arthur A. Johnson Corp., 347 Madison Ave., New York 17, N. Y. LB $2,694,248. bridge over Genessee River. Proj. FAGC 53-11, Monroe Co. Bids June 4. CD 5/19.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Office Bldg., 1035 Parkway Ave., Trenton,

Gull Contrg. Co., 33-15 Lawrence St., Flushing 54, N. Y., LB $1,757,627, structures for Garden State Parkway at Schoolhouse Rd., Shark River, Rte. 33 and Rte. 66, Contr. No. 42, Monmouth Co. Bids June 4. CD 5/15.

NEW JERSEY—New Jersey Highway Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, N. J.

Frank Stamato & Co., 284 Main St., Lodi, N. J. LB $784,731, grading, drainage, bridges, incidental paving Garden State Parkway from Stafford Forge Rd. to Waretown Rd., Contr. No. 69, Ocean Co. Bids June 4. CD 5/15.

▲ **PENNSYLVANIA**—State Hy. and Bridge Auth., 506 N. Office Bldg., Harrisburg,

Conduit & Foundation Corp., 770 S. Schuylkill Ave., Phila., Pa., LB $3,143,570. 11,143 ft. divided hy. of rein.-con. variable in width; 1 plate girder; 1 reinforced rigid frame and two I beam bridges, sect. of Schuylkill Expressway, Phila. Co. Bids June 5. CD 5/7.

▲† **W. V. Pangborne Co.**, Inc., 1927 W. Montgomery Ave. Phila., Pa. LB $612,000. switching station substation distr. sys.

Electric Constructors Inc., 280 Vruland Ave., Paterson, N. J., LB $695,132. lighting sys., McGuire Air Force Base, Eng-36-109-53-457, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. CD 4/7.

Chicago Bridge & Iron Co., 460 Alcoa Bldg., Pittsburgh 19, Pa., LB $101,540, reservoir;

The Fraser Engrg. Co., 95 S. 16 St., Pittsburgh 3, Pa. LB $53,900, piping for reservoir and trunk lines, Mayview State Hospital, MAYVIEW, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids June 3. CD 5/13.

Fleming Co., 1717 Sansom St., Phila., Pa., CA $499,777. McCoach playground, PHILA., PA. Dpt. of Procurement, City Hall Annex, Phila., Pa. Abraham Levy, 1411 Walnut St., and David Supowitz, 246 S. 15 St., Phila., Pa., archts. CD 2/8/45.

▲† **Frederick Paff Co.**, 271 Sheldon St., Hartford, Conn. CA $1,597,000. heating plant, distr. center, Eng-36-109-53-424, DOVER, DEL. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids May 20. CD 4/22.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Hydro Constr. Co.**, Lafayette Bldg., Buffalo, N. Y. CA $1,290,711, general constr., Junior and Senior HIGH SCHOOL and site imprvs., DEPEW, N. Y. Bd. Educ., Union Free School Dist., 7, Depew, N. Y. Bids Apr. 22. CD 4/8.

▲ **Schumacher & Forelle, Inc.**, 11 Northern Blvd., Great Neck, N. Y. CA. $1,000,000. 1 story 200x400 ft. GARAGE and repairs shops, 85 and 23 Sts., 2-story 80x42 ft. office, and 50x100 ft. storage bldg., JACKSON HEIGHTS, N. Y. Triboro Coach Co., 69-01 35 Rd., Woodside, N. Y. CD 3/12.

▲ **T.G.K. Constr. Co. Inc.**, 55 W. 42 St., New York 18, N. Y. CA. $1,000,000. 3 story SCHOOL, Middleton Rd., northeast corner Park View Ave. and 2 story convent, Parkview Ave., southeast corner Roberts Ave., NEW YORK, N. Y. Our Lady of Assumption Church, 1634 Mahan Ave., New York, N. Y. CD 9/18.

Northboro Apartments Inc., 332 E. 149 St., New York, 51, N. Y., Separate Contracts, $500,000. 6 story APARTMENT, Netherland Ave. north of 235 St., NEW YORK, N. Y. Julius Fishking, 161-19 Jamaica Ave., Jamaica, N. Y., archt. CD 2/18.

▲ **Atlas Tile & Marble Works, Inc.**, & **P. J. Carlin Constr. Co.**, 238 E. 26 St., New York 10, N. Y., CA. $4,165,000, superstructure 74th St. POWER PLANT, Contr. P-80, Contr. 1;

Mechanical Installations, Inc., 24-16 Bridge Plaza South, Long Island City, N. Y., CA. $348,765. heating, ventilating, air conditioning, P-80, Contr. 2;

Fein Schlosberg, Inc., 1770 2nd Ave., New York, N. Y. CA. $273,185, plumbing, P-80, Contr. 3;

J. Livingston & Co., 101 Park Ave., New York 17, N. Y. CA. $485,438, electrical work, P 80, Contr. 1-A: Grand total, $5,272,388. NEW YORK, N. Y. Bd. Transportation, 370 Jay St., Brooklyn 1, N. Y. CD 4/8.

George A. Fuller Co., 597 Madison Ave., New York, N. Y. CA $600,000. 1 story, 220x360 ft., steel WAREHOUSE, BERLIN, N. J. Owens-Illinois Glass Co., Berlin, N. J. Giffels & Vallet, Inc., Marquette Bldg., Detroit, Mich., engr.-archt.

Joseph L. Muscarelle, Ltd., 52 First St., Hackensack, N. J., CA. $900,000. shipping and WAREHOUSE, east side of Rte. 9W, ENGLEWOOD CLIFFS, N. J. Prentice Hall, Inc., 70 Fifth Ave., New York 11, N. Y.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

Kahn & Jacobs, 2 Park Ave., New York 16, N. Y., archts.

▲ **Meltzer-Patterson Inc.**, 933 Crosswick Rd., Jenkintown, Pa. Separate Contracts, $1,500,000. RESIDENTIAL DEVELOPMENT Brightside Ave., BRISTOL, PA.

▲ **Broadhomes Co.**, 731 Valley Rd., Melrose Park, Pa., Separate Contracts, $1,500,000. RESIDENTIAL DEVELOPMENT Claremont Rd., MELROSE PARK, PA. Henry Berg, 1411 Walnut St., Phila., Pa., archt.

L. F. Driscoll, 18 W. Chelten Ave., Phila., Pa., CA $595,300. Junior-Senior HIGH SCHOOL, NEWTOWN, PA. Council Rock Junior Senior High School Municipal Auth., Newtown, Pa. Bids Mar. 5. CD 3/24 under LB.

▲ **Anthony Volpe**, 22 Shoemaker Lane, Upper Marion Twp., Norristown, Pa. Separate Contracts. $1,250,000. RESIDENTIAL development, Rte. 202 and Henderson Rd. NORRISTOWN, PA.

Irwin & Leighton, 1505 Race St., Phila., Pa., CA $500,000. STORE, Sears Roebuck & Co., Lessee. NORRISTOWN, PA. Logan Square Inc., 400 DeKalb St., Norristown, Pa. Herbert C. Anderson, 400 DeKalb St., Norristown, Pa., archt. General Industries, Inc., 309 S. Broad St., Phila., engrs.

▲ **Williard Sales & Service**, Inc., 2901 N. Broad St., Phila., 32, Pa., CA. $1,218,700, heating, ventilating;

Daniel J. Keating Co., 3917 27 Baring St., Phila. 4, Pa., CA. $1,195,000, plumbing;

Electrical Power Constr. Co., 3858 Pulaski Ave., Phila. 40, Pa., CA. $989,000, electrical for HOSPITAL and NURSES QUARTERS for Eastern Pa. Psychiatric Institute. Grand total $3,402,700. PHILA., PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids May 6. CD 5/12 under LB.

▲† **Lauter Constr. Co.**, 112 S. 16 St., Phila., Pa., CA, $1,111,529, small arms ammunition PROOF HOUSE, Frankford Arsenal, 36-109-53-364, PHILA., PA. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Feb. 25. CD 3/11, under LB.

Joseph R. Farrell, Inc., 4424 Market St., Phila., Pa., CA. $500,000. ORPHANAGE, Ogontz and Lindley Aves., PHILA., PA. St. Basil's Academy, 710 Fox Chase Rd., Phila., Pa. Bids May 1. CD 5/5.

McCloskey & Co., 1620 W. Thompson St., Phila., Pa. CA. $984,000. Queen Lane HOUSING proj. PHILA., PA. Phila. Housing Auth., 42 S. 15 St., Phila., Pa. Thomas E. Bruder, 225 S. 15 St., Phila., Pa., engr. Bids Mar. 19. CD 4/7 under LB.

▲ **Stofflet & Tilfotson**, 2043 Eastburn Ave., Phila., Pa., CA. $3,357,800. Liddenfield HOUSING proj. PHILA., PA. Phila. Housing Auth., 42 S. 15 St., Phila., Pa. Bids Mar. 17. CD 4/7 under LB.

William F. Lotz, Inc., Adams Ave., and Orthodox St., Phila., Pa., CA. $750,000. furnishing PLANT, WAREHOUSE and offices, PHILA., PA. Masland Duralleather Co., Amber and Willard Sts., Phila., Pa., Abraham B. Eastwood, Jr., and Dana G. Stetser, Old York Rd., Abington, Pa., archts.

▲ **Crump, Inc.**, 4031 Bigelow Blvd., Pittsburgh, Pa., CA. $2,000,000. 72x180 ft. concrete block, brick, steel frame newspaper production PLANT, PITTSBURGH, PA. The Sun Telegraph Co., Telegraph Square, Pittsburgh, Pa. Bids May 28. CD 5/25.

Pottsgrove Manor, Inc., 527 Welsh St., Chester, Pa. Separate Contracts. $544,000. RESIDENTIAL development, Pottsgrove St., POTTSTOWN, PA.

D. Franklin Pancoast, Springfield, Pa., Separate Contracts, $650,000., RESIDENTIAL DEVELOPMENT Beatty Rd., SPRINGFIELD, PA.

▲ **Standard Constr. Co., Inc.**, 1010 Vermont Ave. N.W., Wash., D. C. LB. $7,796,610. est. $8,000,000. Proj. MD 2-15, Fayette Street HOUSING incl. 23 buildings, 7 elevated apartment bldgs., community bldg., parking areas, 16 acre plot area, Lafayette Court, Fayette, Carolina, Orleans and Calvin Sts., BALTIMORE, MD. Baltimore Housing Auth., 709 E. Eager St., Baltimore, Md. Bids June 4. CD 5/8.

▲ **National Concrete Fireproofing Co.**, Terminal Tower Bldg., Cleveland, O. CA $1,130,907. Contr. 1;

Hackart Constr. Co., Inc., 351 W. 54 St., New York, N. Y. CA. $2,648,000. Contr. 2; aluminum extrusion PLANT, HALETHORPE, MD. Kaiser Aluminum & Chemical Corp., Halethorpe, Md. CD 6/8, under LB.

▲ **Hackart Constr. Co., Inc.**, 351 W. 54 St., New York, N. Y. LB. $2,648,000. aluminum extrusion PLANT, Phase No. 1, HALETHORPE, MD. The Kaiser Aluminum & Chemical Corp., Halethorpe, Md. Bids May 27. CD 5/14.

SOUTH

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Wise Contr. Co.**, 719 E. Grace St., Richmond, Va., LB. $2,268,000, aviation accessories overhaul bldg., U. S. Naval Air Station, NOY 73601, NORFOLK, VA. Dpt. P. Wks., Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Bids June 2. CD 5/6.

HERE'S PROOF OF

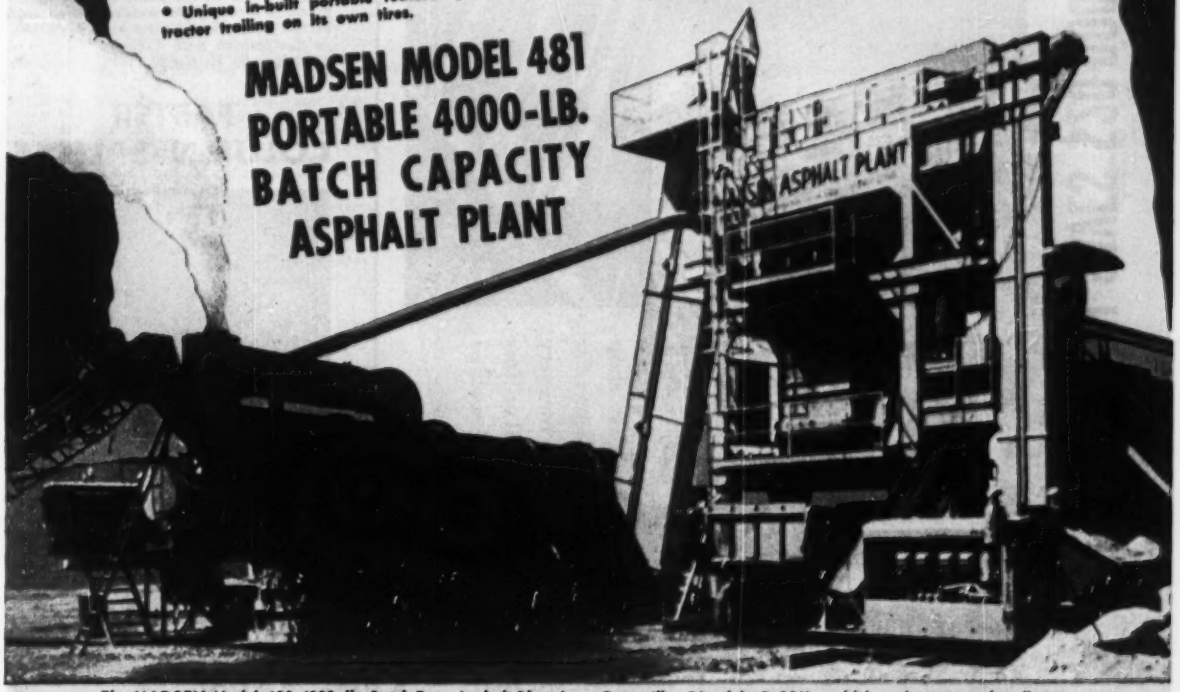
MADSEN'S SUPERIOR ENGINEERING

The American contractor wants to be shown. He wants to know that the equipment he buys is the best and why it is the best! We believe the new MADSEN Model 481 Batch Type Asphalt Plant is the greatest money-making plant ever offered to the American contractor! Developed after many years of background work, its list of features is proof that MADSEN engineering has again stepped 'way out ahead. Check the features below, compare them with any similar equipment, and you will quickly see why your next plant should be a MADSEN Model 481.

- Unit construction designed for easy stacking in factory-matched unit sections, factory-fitted for quick field erection.
- Unique in-built portable features provide for truck tractor trailing on its own tires.
- Accent on increased production through improved air-operated controls on aggregate weighing, weigh-box and asphalt charging, reduced operator fatigue, split-second control, greater end-of-the-day tonnage.
- Individual electric motor drives on major components with alternate diesel or electric power optional on the pug mill mixer.
- New Model 440 Twin-Shaft Pug Mill Mixer with precision-ground externally removable liner segments. The smoothest-running, fastest-mixing twin-shaft pug mill built.
- Improved asphalt pressure injection through high-speed injection pump combined with accurate asphalt weighing. You can't mix the total batch until all the asphalt is in... the MADSEN Patented Pressure Injection System puts it in — in 5 to 7 seconds!
- Complete safety equipment in larger operating platforms, maintenance platforms and complete stairway and caged ladderway structures... unit-built for ease of handling and assembly.

Get the complete story on the new MADSEN MODEL 481 ...to know this plant, is to buy this plant!

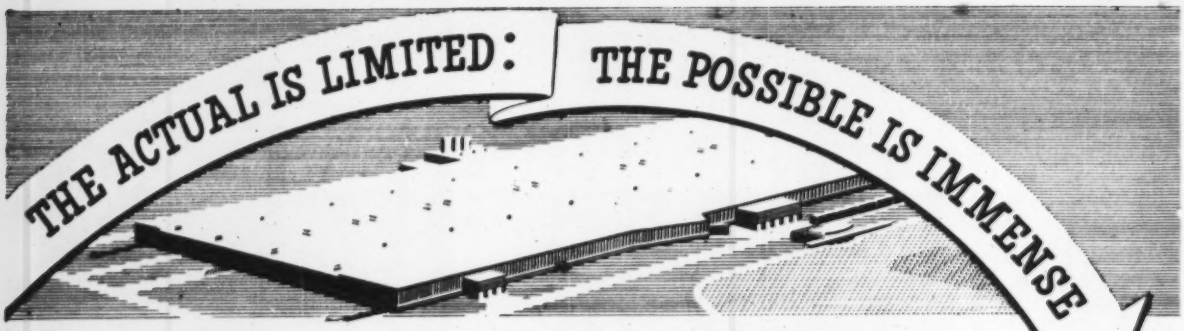
MADSEN MODEL 481 PORTABLE 4000-LB. BATCH CAPACITY ASPHALT PLANT



The MADSEN Model 481 4000-lb. Batch Type Asphalt Plant in operation on a Navy Project. Plant is in full operation, delivering top tonnage, operating on dry and wet mix cycle...full automatic weighing and full electric timing. Engine in foreground is D-17Y Caterpillar Diesel (a D-13Y would be adequate to handle pug mill only.) Dryer is a MADSEN 84"x30' unit. MADSEN 380 Dust Collector (hidden) is powered by Caterpillar D-318X engine shown at left under conveyor.

MADSEN Equipment that Serves ®

MADSEN IRON WORKS, INC.
P. O. BOX 589 • HUNTINGTON PARK, CALIF.



NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT

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WELDED DESIGN SAVES $20,000 OVER RIVETING

FABRICATION and erection costs have been cut $20,000 with welded design of the Mayflower Apartments at Virginia Beach, Virginia. Simple details with welded frame connections provide further savings of 25% in weight of connections. Total framework weight is reduced 3%.

Connections are engineered to allow fast, low cost shop fabrication and yet permit flat position field welding on every joint. Each design detail utilizes the full economies of welded construction.

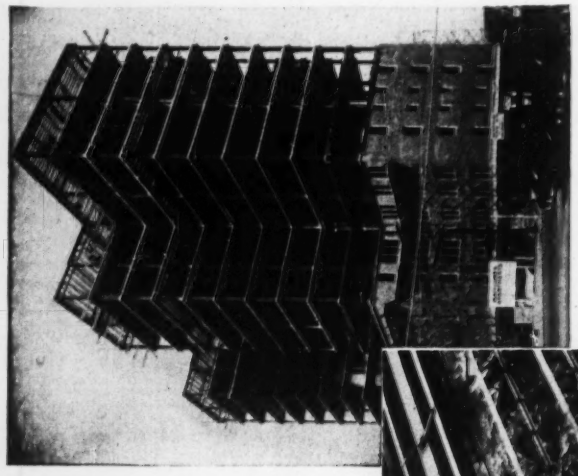


Fig. 3. Welded steel bar joists *set on 24" centers and welded in position for 11-story all welded framework. Fabricators and Erectors: Pittsburgh-Des Moines Steel Co., Pittsburgh, Penna. Engineers and contractors: Byrne Organization, Inc., Washington, D. C.*

SIMPLE DETAIL SPEEDS ERECTION

Fig. 1. Faster beam-to-column connections. *Clip angle is shop welded to column for bolting beam in the field. Outside cover plates are then field welded to top and bottom flanges and the top plate to column in flat position with Lincoln "Fleetweld 5" electrodes. Bottom plate is shop welded.*

FASTER COLUMN SPLICES

Fig. 2. Typical welded splice *of all columns 12 to 12 and 12 to 14 WF column. Bearing plate is shop welded to lower column . . . clip angle for erection bolts is shop welded to upper column. All field welds are made in fast, easy downhand position.*

HERE'S HOW WELDED DESIGN SPEEDS ERECTION

Studies in Structural Arc Welding free on request. Designers and engineers write on your letterhead to Dept. 2305.

THE LINCOLN ELECTRIC COMPANY

Cleveland 17, Ohio

THE WORLD'S LARGEST MANUFACTURER OF ARC WELDING EQUIPMENT

▲ **Cramer-Vollmerhausen Co. Inc.**, 2601 Connecticut Ave., N. W., Wash. D. C., CA $3,347,000. Woodrow Wilson HIGH SCHOOL, PORTSMOUTH, VA. City, City Hall, Portsmouth, Va. Bids May 22. CD 6/1 under LB.

Southwest Virginia Bldg. Co., State Planters Bank Bldg., Richmond, Va. Owner Builds. $500,000. 70 RESIDENCES, RICHMOND, VA.

Buncombe Co. Bd. Educ., Court House, Asheville, N. C. rejected bids May 5, East Buncombe HIGH SCHOOL, LB $602,900. ASHEVILLE, N. C. (Correction status). CD 6/2, under CA.

Clarence Mobley Constr. Co., 640 11 St., Augusta, Ga., CA, $498,500, CLASSROOM-ADMINISTRATION bldg. at Medical College of Georgia, AUGUSTA, GA. Bd. Regents, University System of Georgia, 20 Ivy St. S. E., Atlanta, Ga. Bids May 26. CD 4/15.

Gust K. Newberg Constr. Co., 99 N. E. 71 St., Miami, Fla., CA. $673,000, "Ashe Memorial Building" ADMIN, BLDG., CORAL GABLES, FLA. University of Miami, 1200 Campo Sano Ave., Coral Gables, Fla. Bids May 19. CD 5/26, under LB.

Gill Constr. Co., 113 S. E. 2nd St., Fort Lauderdale, Fla., Owner Builds. $850,000. 75 RESIDENCES, FORT LAUDERDALE, FLA.

▲ **Barnes Constr. Co. and Richardson Constr. Co.**, Fort Lauderdale, Fla., CA $2,100,000 drive-in SHOPPING CENTER, FORT LAUDERDALE, FLA. Antioch College Foundation, Fellow Springs, O. CD 10/10/51.

O. Q. S. Lumber Co., Indianola, Mis. Owner Builds, est. $550,000. 67 RESIDENCES, INDIANOLA, MISS.

A. & O. Builders, 3207½ Metairie Rd., New Orleans, La. CA $564,711. high SCHOOL, CHALMETTE, LA. St. Bernard Parish School Bd., Chalmette, La. Bids June 2. CD 5/19.

▲ **G. E. Bass & Co.**, P.O. Box 1033, Jackson, Miss. CA $1,294,033. HOUSING Proj. LB-6-5, MONROE, LA. Monroe Housing Auth., Monroe, La. CD 6/2 under LB.

Horace B. Rickey Inc., P.O. Box 218, Lafayette, La. CA $626,545. 75 HOUSING units, MORGAN CITY, LA. Morgan City, Housing Auth., Morgan City, La. CD 6/2 under LB.

▲ **Lionel Favert Co., Inc.**, 937 Gravier St., New Orleans, LA. LB $1,162,637. 3 story, bsmnt., brick, steel, concrete St. Joseph's HALL of PHILOSOPHY, NEW ORLEANS, LA. Roman Catholic of the Diocese of New Orleans, c/o Diboils, Kessell & Assoc., archts., 637 Pere Antoine Court, New Orleans, La. Bids June 2. CD 6/2.

Keller Constr. Co., 7900 Palm St., New Orleans, La. LB est. $750,000. 2 story, masonry, steel DEPARTMENT STORE, NEW ORLEANS, LA. F. W. Woolworth Co., 737 Canal St., New Orleans, La. Bids June 4. CD 5/19.

▲ **R. P. Farnsworth & Co.**, 1515 S. Salcedo St., New Orleans, La. CA $1,408,500. 2 story, rein.-con. Junior High SCHOOL, NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondelet St., New Orleans, La. Bids May 26, awarded May 29. CD 6/2, under LB.

▲ **Algernon Blair Co.**, First National Bank Bldg., Montgomery, Ala., CA $2,500,000 to $3,000,000 Charlane Subdivision, 150 to 300, brick veneer and frame HOUSES, JEFFERSONTON, KY. Thomas Enterprises, Inc., Jeffersonton, Ky. E. W. Augustus, Wallace Ave., St. Matthews, Ky., archt. Awarded May 27.

▲† **Foster Creighton Constructors** (Foster & Creighton Co., American Natl. Bank Bldg., Nashville, Tenn., Fischback & Moore Inc., 1st Natl. Bank Bldg., Atlanta, Ga. and Huffman-Wolfe Corp., 404 Sawtell Ave., S.E., Atlanta, Ga.), CA est. $10,000,000. rehabilitation of Holston ORDNANCE WORKS, near here KINGSPORT, TENN. U. S. Eng., 303 Federal Office Bldg., Nashville, Tenn., Patchen & Zimmerman Engineers, 525 Telfair St., Augusta, Ga. engrs.-archts.

▲ **Folk-Jordon Co. Inc.**, 214 Union St., Nashville, Tenn., Owner Builds, $1,000,000, 100 RESIDENCES, NASHVILLE, TENN.

MIDL E WEST

BIDS ASKED—BUILDINGS

▲**Ill., Evanston**—SCHOOL—B.A. 6/23—Community Consolidated School Dist. 65, 1323 Hinman Ave., (1) grade school, Dodge St. and Oakton Ave.; (2) grade school, Main and Ashland Sts., $1,400,000. Perkins & Will, 309 W. Jackson Blvd., Chicago, Zone 6, archts. CD 1/23.

O., Marion—TRAINING SCHOOL—B.A. 6/25—Dpt. P. Wks., Clyde L. Moyer, dir. Ohio Dpts. Bldg., Columbus, Ohio State Training School buildings. Plans deposit $50. Geo. S. Voinovich, 1010 Euclid Bldg., Cleveland, Zone 15, archt. CD 3/3.

Ill., Streator—SCHOOL—B.A. 6/30—School Dist. 5, Streator, new Woodland School and Wilson School addn. $800,000. Bradley & Bradley, 226 S. Main St., Rockford, archts. CD 1/30.

▲ **Ill., Chicago**—OFFICE—B.A. 7/15—Prudential Insurance Co., of America, 763 Broad St., Newark, N. J. superstructure 41-story office. $30,000,000. Naess & Murphy, 80 E. Jackson St., archts. CD 3/5/51.

▲ **O., Columbus**—EXCHANGE—Bids Asked—Ohio Bell Telephone Co., 42 E. Gay St., excavation for 4-story 188x188 ft., 2 bsmnts., brick, rein.-con. steel exchange bldg., to be used as equipt. bldg. $5,000,000. Tibbas-Crumley-Musson, 965 E. Broad St., archts. CD 1/6.

SOON LETS CONTRACT—BUILDINGS

▲ **Ill., Chicago**—APARTMENT—2970 Lake Shore Dr., Apartments, Inc., c/o Loewenberg & Loewenberg, archts., 111 W. Monroe St., Zone 3, soon lets contract 19 story bsmnt. 72-unit apartment at 2970 Lake Shore Dr. $2,000,000.

Plan your structures in plentiful timber and use **TECO**

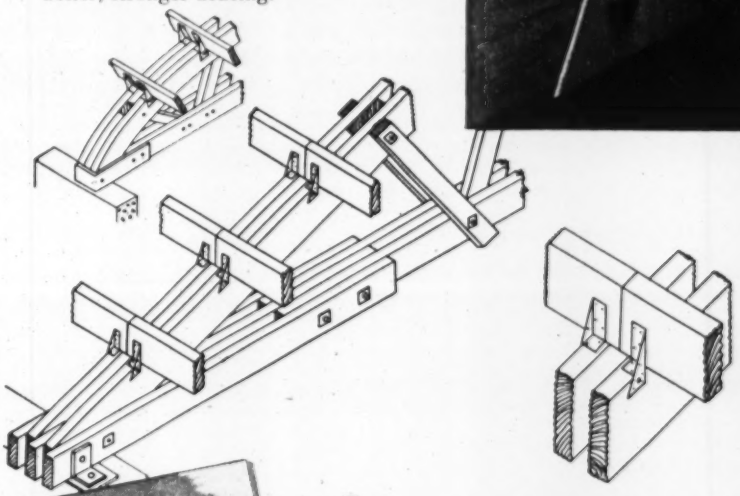
Trip-L-Grip

FRAMING ANCHORS

for stronger, more economical secondary connections, such as

RAFTERS to TRUSSES or PURLINS

Roof rafters and joists are securely anchored to purlins or truss chords with type A Trip-L-Grips. They eliminate toenailing uncertainties, expensive steel angles or ties and, on relatively flat or low pitch roofs, eliminate bridging between rafters. They serve as automatic spacers and speed up construction. They tie the whole roof together and provide better, stronger bracing.



This is only one of the many uses of Trip-L-Grips detailed and illustrated in the FREE booklet, "Aids for Better Homes and Other Wood Construction."

Free

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Please send FREE booklet, "Aids for Better Homes and Other Wood Construction."

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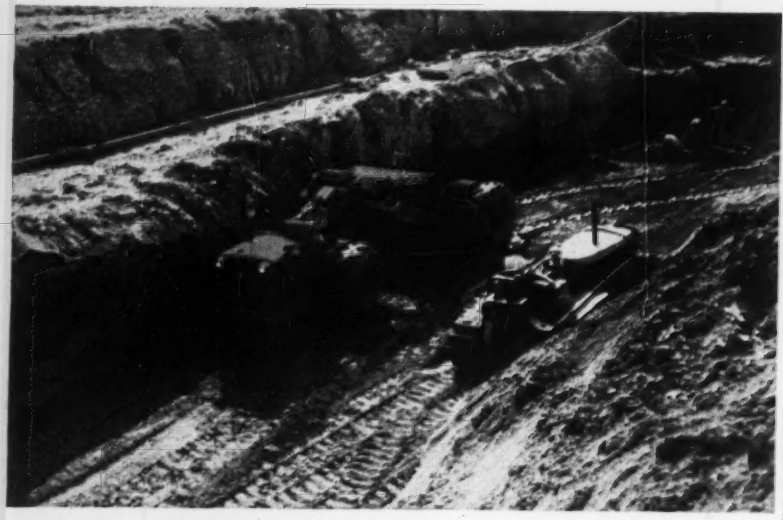

Tournapulls dig 25'-deep sewer trench for Pentagon Building

Unorthodox methods were used to dig a 25'-deep, 7000'-long trench for 8' sewer pipe at the new Pentagon Warehouse near Washington, D. C. Bids of most contractors were based on traditional excavation methods—by dragline. M. J. Bles of McLean, Virginia, disagreed. So confident was he that he could dig the 130,000-yd. trench cheaper and faster with his 2 modern, high-speed D Tournapulls that he underbid his nearest competitor by $149,000! Here's why.

Mr. Bles' low bid was based on 3 big Tournapull advantages:

1. With their fast haul, his 7-yd. "D's" could outproduce a big dragline, even in the deep cut. Hourly operating costs would be less, too.

2. Excavated material, spread in thin layers by Tournapulls, would dry quicker than piles heaped by a dragline or trencher. Also, Tournapulls could reload and spread it as backfill without aid of other equipment.

3. Because Tournapulls operate in the trench, and could dump material at convenient locations away from cut, weight on side walls of trench would be minimized. In this way, there would be no danger of a cave-in of side walls during operations in this soft material. That would eliminate the need for the contractor to provide protective sheathing of trench walls—a major cost factor.

Moves 1,080 yds. per day

Per plan, Tournapulls were push-loaded with 5½ cubic yds. of mixed muck, sand, and gravel in 30 to 45 seconds. They hauled up out of the trench without trouble, and spread loads in thin layers some distance from the cut. No cave-ins occurred; no trimming or shoring was needed. Entire 130,000-yd. project, including backfilling of the 96" concrete pipe, was completed in 120 days. Costs were well within the margin allowed. Job records showed it would have taken a 5-yd. dragline to equal this production, with costs far higher.

Whenever *you* have dirt to move on *any* type job, it will pay you to investigate Tournapull's work record. See your LeTourneau Distributor for all the facts.

Tournapull—Trademark Reg. U. S. Pat. Off. DP-300-A-c

LeTourneau-Westinghouse Company
PEORIA, ILLINOIS

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 139 E. Gay St., Columbus, Zone 15,

American Bridge Div., United States Steel Corp., 1302 Union Trust Bldg., Cincinnati, O., LB $237,383, Contr. M 19, 1,861,000 lb. fabricated structural steel, 50,800 lb. structural expans. and/or contraction joints, for two twin and ten single-bridge structures of from three to four spans each, in Design Sect. D 19 of Ohio Proj. No. 1, Fulton Co.;

LB $2,408,221, combined low bid for Contrs. M-19, M-15, M-18 and M-20.

Bethlehem Steel Co., E. 3 St., Bethlehem, Pa., LB $2,235,752, Contr. M-15, 6,959,000 lb. fabricated Structural steel, 391,300 lb. structural expans. and/or contraction joints for fifteen twin and eleven single bridge structures of from one to six spans each, in Design Sect. D 15 of Ohio Trunpike Proj. No. 1, Ottawa and Wood Counties; Contr. M-18, 12,823,300 lb. fabricated structural steel, 135,200 lb. structural expans. and/or contraction joints for five twin and twelve single bridge structures of from three to five spans each in Design Sect. D 18 of Ohio Turnpike Proj. No. 1, Lucas and Fulton Counties; Contr. M-20, 4,547,000 lb. fabricated structural steel, 257,500 lb. structural expans. and/or contraction joints for three twin and twelve single bridge structures of from three to five spans each, in Design Sect. D-20 of Ohio Proj. No. 1, Fulton and Williams Counties; Bids June 2. CD 5/21.

▲ **OHIO**—State Hy. Dpt., Columbus.

Horvitz Co., Midland Bldg., Cleveland, O., LB $1,521,667, est. $2,500,000. building and paving final sect. of East Memorial Shoreway from E. 22 St. to Marquette Ave., divided 8-lane hy. and parking lot interchanges, Cuyahoga Co. Bids June 2. CD 5/8.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **General Electric Corp.**, Portsmouth, O., CA $3,826,680, power transformers;

Westinghouse Electric Corp., 207 W. 3 St., Cincinnati, O., CA $1,919,632, power transformers;

Pennsylvania Transformer Co., P. O. Box 330, Canonsburg, Pa., CA $836,560, power transformers or GASEOUS DIFFUSION PLANT (Subcontractors under Peter Kiewit Sons' Co., P. O. Box 268, Portsmouth, O.) for Atomic Energy Comn., 1901 Constitution Ave., N.W. Wash. 25, D. C. PIKETON and WAKEFIELD, O. CD 8/13/52, under CA.

▲† **E. C. Corp.**, Box 118, Portsmouth, O., CA $1,803,000, 2 story 168x186 ft. rien.-con., steel permanent admin. bldg., with four wings each 54 ft. wide, ranging from 108 to 162 ft. long; 133x155 ft. wood frame cafeteria; 133x151 ft. wood frame hospital;

Central Contg. Co., 1220 Algoma Blvd., Oshkosh, Wis. CA. $1,647,650, pump house and 2½ mi. 48 in. water supply line from Scioto River to Atomic plant site for GASEOUS DIFFUSION PLANT (Subcontractors under Peter Kiewit Sons' Co., P. O. Box 268, Portsmouth, O.), for Atomic Energy Comn., 1901 Constitution Ave. N.W. Wash. 25, D. C. PIKETON and WAKEFIELD, O. CD 8/13/52, under CA.

▲ **Willo-Shore Builders, Inc.**, c/o Andrew Rosenfeld, Citizens Bldg., Cleveland, O. Owner Builds. $6,000,000. 350 one and half story BUNGALOWS between Lake Shore Blvd. and Grand Blvd. 90-acre tract, WILLOWWICK, O.

▲ **Milton & Co.**, 2709 W. Roosevelt Rd., Chicago, Ill. CA. $2,000,000. 21-story APARTMENT, 54 units, 6127 Winthrop Ave., CHICAGO, ILL. Milton M. Schwartz, 111 W. Monroe St., Chicago 3, Ill. Robert F. Kill & Assoc., 111 W. Monroe St., Chicago 3, Ill. archts. Awarded May 27.

▲ **A. L. Jackson Co.**, 161 E. Erie St., Chicago 11, Ill. CA. $2,000,000. 5-story OFFICE, bank on main floor, EVANSTON, ILL. First National Bank & Trust Co., Sherman and Davis Sts., Evanston, Ill. Naess & Murphy, 80 E. Jackson St., Chicago 4, Ill. archts. Awarded June 2.

Joseph T. Carp, Inc., 5640 Northwest Blvd., Chicago, Ill., CA. $750,000. 2 story 45,000 sq. ft. brick, stone trim, OFFICE, 7200 N. Cicero Blvd. LINCOLNWOOD, ILL. E. I. duPont deNemours & Co., duPont Bldg., Wilmington, Del. Ralph E. Stoetzel, 111 W. Monroe St., Chicago 3, Ill. archt. CD 6/1.

WEST OF MISSISSIPPI

SOON LETS CONTRACT—BUILDINGS

▲ **Tex., Tyler**—FACTORY—General Electric Corp., River Rd., Schenectady, N. Y., soon lets contract appliance factory-plant. $7,000,000. CD 3/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Interstate Constr. Co., 3621 Troost St., Kansas City, Mo. CA $768,640. est. $750,000. new water intake station, 2 sedimentation basins, KANSAS CITY, MO. City, c/o M. P. Hatcher, dir. Water Dpt., City Hall, Kansas City, Mo. Burns & McDonnell Eng. Co., Box 7088, Kansas City, Mo., engrs. Jas. B. Ramsey, water dpt. engr. Awarded May 25. CD 11/7/52.

Fruin-Colnon Contg. Co., 1706 Olive St., St. Louis 3, Mo. CA est. $750,000. television station for station KSTM-TW 6000 block of Berthold Ave. Incl. 14,000 sq. ft. floor space, 650 steel antenna at rear of bldg., ST. LOUIS, MO. Broadcast House, Inc., William E. Ware, pres., Security Bldg., St. Louis 2, Mo. CD 3/27.

† **Foley Bros.**, 900 New York Bldg., St. Paul, Minn. CA. $593,459, Bartley Diversion Dam, near Indianola, Red Willow Co., Spec. DC-3890. NEBRASKA. Bureau Reclamation, Dpt. Interior, McCook, Neb. Bids Mar. 24. CD 4/3 under LB.

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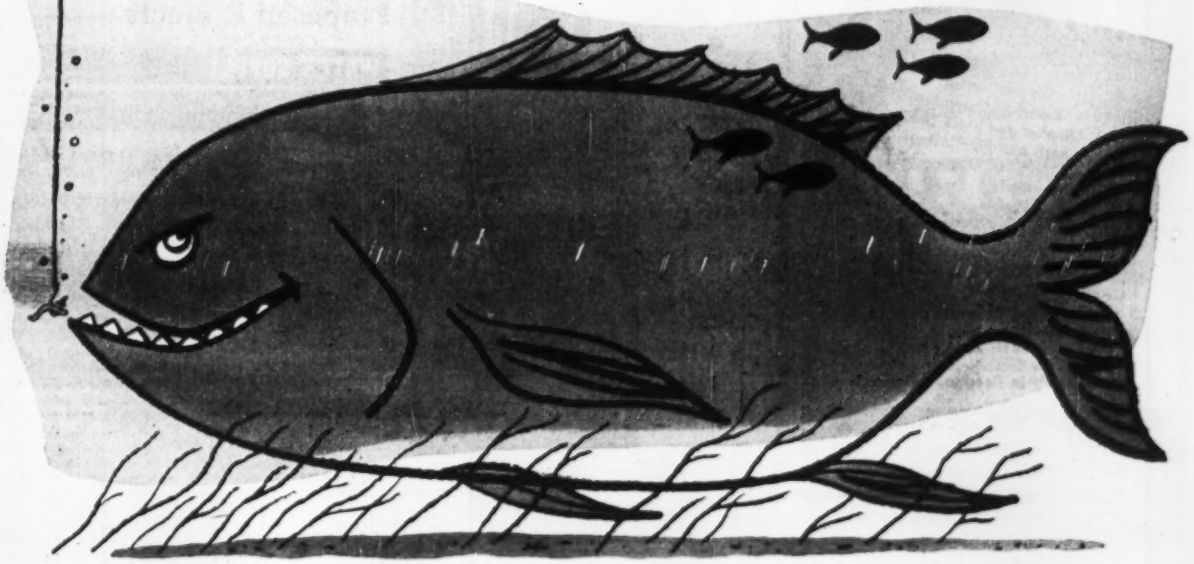

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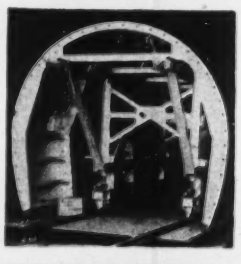

MAYO TUNNEL & MINE EQUIPMENT LANCASTER PA

† **Capitol Steel & Iron Co.**, 1726 S. Agnew St., Oklahoma City, Okla., LB **$599,270**, hangars; LB **$224,826**, doors for hangars, prefab. multipurpose hangars for hangars at Lincoln Air Force Base and Rapid City Air Force Base. Inv. 25-066-53-182. LINCOLN, NEB. and RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids June 2. CD 5/13 under Lincoln, Neb. and Rapid City, S. D.

BUILDINGS

LOW BIDS AND CONTRACTS

A. H. Neumann & Bros., 514 Hubbell Bldg., Des Moines, Ia. CA **$995,573**. general contract, May Goodrell Junior High SCHOOL, DES MOINES, IA. Bd. Educ., 629 3 St., Des Moines, Ia. CD 6/4 under LB.

▲ **Wilson & Johnson Constr. Co.**, 918 City National Bank Bldg., Omaha, Neb., Owner Builds, **$5,000,000** 400 DWELLINGS in vicinity of 50 and Spring Sts. OMAHA, NEBR.

Lippert Bros. Constr. Co., 2800 N. Santa Fe St., Oklahoma City, Okla. CA **$708,317**. general contract, high school GYMNASIUM and auditorium bldg., ATCHISON, KAN. School Dist. 1, Atchison Co., Atchison, Kan. CD 5/12 under LB.

▲ **Texas Power & Light Co.**, Interurban Bldg., Dallas, Tex., CA **$3,750,000**. municipal electric POWER PLANT, LINDALE, TEX. City, Lindale, Tex. CD 4/1.

▲ **Pasadena Savings & Loan Assn.**, Pasadena, Tex. cancelled bids to have been opened June 21, 2-story bsmnt. BANK and office, Est. **$1,000,000**. PASADENA, TEX. CD 5/27.

▲ **City Public Service Bd.**, 201 N. St. Marys St., San Antonio, Tex., Purchases, Own Forces. **$8,500,000**. 60,000 kw electric POWER PLANT, north of Military Hy. near Nacogdoches Rd., SAN ANTONIO, TEX. CD 1/30.

Don Elliott, Box 445, Sherman, Tex., CA. $787,388, HIGH SCHOOL and vocational unit, SHERMAN, TEX. Sherman Independent School Dist., Sherman, Tex. Bids May 12. CD 5/20 under LB.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

P. S. Lord, 4507 S.E. Milwaukee St., Portland, Ore., LB. **$983,849**. 13,534 lin. ft. 3x5 ft.; 2,024 lin. ft. 36 in. West Central Unit Interceptor Sewers. PORTLAND, ORE., City, City Hall, Portland, Ore. Bids June 2. CD 5/13.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,

J. A. Thompson & Son, P. O. Box 158, Inglewood, Calif. LB **$1,140,221**. structural steel, rein.-con. overhead between Leonis St. and Dunham St., Los Angeles Co. Bids May 28. CD 5/8.

Peter Sorensen, P. O. Box 790, Redwood City, Calif. LB **$197,000**. Schedule A; pump and tide gates;

San Francisco Bridge Co., 140 Montgomery St., San Francisco, Calif. LB **$383,291**. Schedule B, dredging;

Norman Peterson, 2832 Ninth St., Berkeley, Calif. LB **$561,066**. entire proj., Seal Slough Drainage, SAN MATEO, CALIF. City, City Hall, San Mateo, Calif. Bids May 28. CD 3/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Daum-Donaldson Constr. Co.**, 321 S. 24 St., Phoenix, Ariz., CA. **$537,000**. SCHOOL, dormitories, dining hall, quarters and facilities at Indian School Nazlini, WINDOW ROCK, ARIZ. Bureau Indian Affairs, Dpt. Interior, Interior Bldg., 19 and "C" Sts., N. W. Wash. D. C. Bids Apr. 30.

Proposed Projects——

WATER SUPPLY

▲ **Calif., San Francisco**—City and San Francisco Co., City Hall, constr. Cherry River Proj., incl. dam, **$7,452,216**. CD 3/18/43.

Fla., Leesburg—City, WW imprvs. **$100,000**. Russell & Axon, Municipal Airport, Daytona Beach, Fla., consult. engrs.

Ind., Kokomo—Kokomo Waterworks Co., Div. of American Waterworks, Kokomo, imprvs. to plant and dam in Wildcat Creek. **$625,000**. CD 9/22/48.

† **La., New Orleans**—U. S. Erg., 606 Santa Fe Bldg., Galveston, Tex., plans by Rosenthal Kessels, Jones-Godat & Assoc., engr.-archt., The California Bldg., water wells, distr. sys., Michoud Ordnance Plant, **$200,000**.

Mo., Sugar Creek—City, bond election June 23, water sys. imprvs., **$145,000**.

Okla., Blackwell—City, water extens. **$150,000**. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

▲ **Okla., Oklahoma City**—City, City Hall, bond election July 7, 80 shallow wells. **$2,000,000**. M. B. Cunningham, city engr. CD 2/26.

Tenn., Clarksville—St. Bethlehem Utility District, Clarksville, installing water lines to serve county residents, **$100,000**.

Tex., Garland—City, Phase 5, water storage and supply **$100,000**; Phase 6, new water lines, system rehabilitation **$250,000**. Forrest & Cotton, Praetorian Bldg. Dallas, Tex., consult. engrs. CD 5/20.

Va., Lynchburg—City, filtration plant at College Hill Reservoir, $548,000.

SEWERS, WASTE DISPOSAL

▲ **Ala., Anniston**—City, City Hall, sewage disposal plant, $1,000,000. Polglaze & Basenberg, 812 S. 27 St. Birmingham, consult. engrs.

Calif., Fillmore—City, 345 Central Ave., sewage treatment plant, sanitary sewers, $500,000, Hostrup, Lyons & Assoc., 9526 Pico Blvd., Los Angeles, consult. engrs. S. G. Bennett, city engr.

Calif., Los Angeles—City, City Hall, sewers in Moorpark St. and Balboa Blvd. sewer dist., Van Nuys, $110,023. sewers in Slauson Ave. and Braddock St. sewer Dist., Venice, $244,720, sewers in Inglewood Blvd. and Braddock Dr. sewer dist., Venice, $202,613.

Calif., Salinas—Alisal Sanitary Dist., $390,000 bond election June 24, addns. to sewage disposal plant, imprvs. to collective sys. CD 3/30.

Fla., Miami Beach—City, sewer screening plant, $800,000. Malcolm Pirnie Engineers, 25 W. 43 St., New York 36, N. Y., consult engrs. CD 6/20/51.

Ga., Americus—City, two sewage disposal plants, $647,000 Wiedeman & Singleton, P. O. Box 1878, Atlanta, Ga. consult engrs.

▲ **Ill., Decatur**—Decatur Sanitary Dist., 600 Powers Lane, voted $4,200,000 bonds May 26, interceptor sewerage sys. extens. and imprvs., incl. 2 interceptor sewers. $4,200,000. Warren & Van Praag 253 S. Park St., Decatur, consult. engrs. CD 5/15.

Ind., Haubstadt—Town Bd., Haubstadt, sewage treatment plant, sewer sys. $200,000. Paul J. Kleiser & Assoc., Hippedrome Bldg., Terre Haute, consult. engrs.

▲ **Ind., Indianapolis**—Bd. Sanitary Comrs., Clarence T. Drayer, chmn., City Hall, Zone 4, interceptor sewer and Southern Ave. relief sewer, "Belmont Interceptor" $4,000,000. Russell B. Moore Assoc., 810 N. New Jersey St., Zone 4, consult. engrs.

Ind., Speedway—Bd. P. Wks., Town Hall, 1450 Lyndhurst Dr., sewage treatment plant. $400,000; relief sewers, $100,000. L. I. Couch Co., Inc., 230 E. Ohio St., Indianapolis, Zone 4, consult. engr.

Mo., Nevada—City, voted $675,000 bonds May 19, sewage plant and sewers, B. L. Oliver & Co., 1805 Grand St., Kansas City, Mo., consult. engrs. CD 5/6.

▲ **Mo., Warrensburg**—City, City Hall, extens., imprvs. to sewer sys. incl. 2 sewage disposal plants, sanitary and storm sewers, $1,300,000, Chas. A. Haskins, 1009 Baltimore Ave., Kansas City 5, Mo., consult. engrs. CD 6/4.

Okla., Blackwell—City, sewage disposal plant imprvs. $200,000. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

Tenn., Dyersburg—City, City Hall, voted bonds Apr. 1, sewer extens., sewage disposal plant, $780,000. Marion L. Crist, Dyersburg, consult. engr. CD 3/9.

Tenn., Somerville—City, City Hall, sewage disposal plant, sewer line extens. $300,000. Allen & Hoshall, 65 McCall Pl., Memphis, consult. engrs. CD 5/20.

Tex., Dallas—City, City Hall, Main & Harwood Sts., storm sewers incl. Lisbon Branch Sewer line, Five-Mile Creek to Maywood, $205,000; storm sewers, Presdion St. Laterial-Lisbon Branch to Lancaster St., $148,500; Storm sewers incl. misc. laterals in connection with Lancaster Road paving, $109,250; storm sewers Harlandale St. Lateral-Maywood to Brightside St., $138 250; Myers & Noyes, Tower Petroleum Bldg., Dallas, consult. engrs; laying storm sewers on Lemmon Ave., Mockingbird Lane to McArthur Dr., $80,000. Rollins & Mahoney, 3402 McFarin St., Dallas, consult. engr. CD 11/21/51.

▲ **Ont., Cooksville**—Toronto Twp., J. H. Pinchin, clk. Municipal Bldg., sewer project in area south of Queen Elizabeth Wasy, incl. outfall sewers into Lake Ontario pumping stations at Lakeview and Port Credit and sewer mains. $1,500,000. W. A. Maxwell, twp. engr. CD 7/7.

BRIDGES

Ind., Wabash—Bd. Wabash Co. Comrs., Court House, voted bonds, steel bridge over Eel River, Liberty Mills, $140,000. CD 1/9.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Dorchester-Milton-Quincy—6-lane expressway (Cape Cod Rd.) from Old Colony Blvd., Dorchester with new bridge ($1,000,000) over Neponset River, high level 6 span 30 ft. above high water to link with expressways to and on Cape Cod. $30,000,000.

Pa., Tarentum-Boro—Boro Bldg., steel, rein.-con. bridge over Bull Creek, $140,000. Morris Knowles, Park Bldg., Fifth Ave., Pittsburgh, engrs.

▲ **Tex., Dallas**—City, City Hall, Main and Harwood Sts. replacement of weak bridges within city limits, $2,500,000. Jack Davis, P. Wks. Engr.

Alta., Edmonton—City, City Hall, viaduct, Stoney Plain Rd., $100,000.

▲ **Ont., Toronto**—City, City Hall, Toronto, bridge over railway and Don River on Eastern Ave. between St. Lawrence St. and Broadview Ave., $4,800,000; subway at Symington Ave. and CPR crossing, $660,000; subway at Pape Ave. and CNR railway crossing, $1,400,000; railway underpass at Greenwood Ave. at CNR railway crossing, $1,200,000; railway underpass on Davenport Rd. $700,000. L. B. Allan, comr. of works. CD 1/23.

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STREETS AND ROADS

▲ **Ala., Mobile**—Mobile Co. Comrs., Court House bond election July 29, road imprvs. $4,273,000. Ewin Engr. Corp., P. O. Box 361, Mobile, Ala., consult. engrs. CD 1/20.

Colo., Denver—City and County of Denver, City & County Bldg., Street paving Dist. No. 148, conc. curb, gutter, sidewalk, grav. base course, asph. conc. paving, necessary incidental imprvs., $205,600, Terry Owens, city engr. CD 2/27/50.

Colo., Montrose—City, City Hall, paving, curb and gutter, storm sewer, incl. 80 blocks of paving, $350,000, Wilson & Co., 20 E. Ninth Ave., Denver, engr.-archts.

▲ **Kan., Kansas City**—City Comrs., City Hall, link 4-lane from 7 St. and Southwest Blvd. to connect with Rainbow Blvd. to eliminate jog with cloverleaf intersection, reconstr. of Rainbow to 39 Sts., $3,000,000. CD 6/12/46.

O., Columbus—Franklin Co. Comrs., Court House, widen 3 mi. strip of Trabue Rd. from McKinley Ave. to Rome-Hillard Rd. from 18 to 24 ft. $250,000. Guy Elbin, County engr. CD 1/11/52.

▲ **Pa., Pittsburgh**—Allegheny Co. Comrs., County Office Bldg., highway and bridge connecting Homeville to Homestead Duquesne Rd., concrete hy. and steel, concrete bridge, West Mifflin, $2,000,000; widen., resurf., curbing, West Run Rd., ¾ mi. bit. surf., West Homestead, $150,000. CD 12/15/43.

Tex., Garland—City, street imprvs., paving, $200,000, Forrest & Cotton, Praetorian Bldg., Dallas, Tex., consult. engrs. CD 5/20.

Que., Quebec City—Municipality, City Hall, elevated roadway from the top of Palace Hill to Henderson St., $175,000. Ed Hamel, City Hall, city engr. CD 11/18/49.

EARTHWORK, WATERWAYS

▲ **California**—Southern California Edison Co., 601 W. Fifth St., Los Angeles, constr. Mammoth Pool Proj. across San Joaquin River above its Big Creek Plant No. 8, Fresno and Madera Counties, $39,000,000.

▲ **New Brunswick** — POWER DEVELOPMENT — New Brunswick Electric Power Comn., 527 King St., Fredericton, power development on St. John River, Beechwood, $125,000,000.

AIRPORTS

▲ **Calif., Los Angeles**—AIRPORT—City, City Hall, defeated $33,000,000 bonds May 26, airport imprvs. CD 5/13.

▲ **Tex., Mission**—AIR BASE DEVELOPMENT U. S. Eng., 606 Santa Fe Bldg., Galveston, plans by Stone & Pitts, 1872 Calder St., Beaumont, modification of 38 existing bldgs., personnel, barracks bldgs., etc., $900,000; site development, incl. area grading, filling, leveling, etc., $175,000; constr. and paving of vehicle, etc. parking areas, $250,000; moving and resetting on concrete fdns. 25 field bldgs., $475,000; outside lighting sys. for general areas, $110,000; natural gas distr. sys., $125,000; water sys., $100,000; sanitary sewer sys., $225,000; storm sewers, $150,000; AIO storage areas, $2,000,000; motor pool, $400,000; drainage to include pipe drains and ditching (open type) for field and general areas, $200,000; Carter & Burgess, 1872 Calder St., Beaumont, consult. engrs.; streets and roads, $75,000; jet refueling facilities, service station, $145,000; base maintenance hangar, $250,000; squadron maintenance hangar, $550,000. George Rhine, 209 San Pedro St., San Antonio and Carter & Burgess, 1872 Calder St., Beaumont, consult. engrs. all foregoing at Moore Air Force Base. CD 12/24/52.

▲ **Tex., Rockwall**—AIR FREIGHT CENTER—City, Rockwall, voted bonds May 26, airport (air freight center), $4,000,000; general grounds development, incl. grading, filling, ditching, leveling, some drainage, $150,000; refrigerated cold storage bldgs., $850,000. CD 5/20.

PUBLIC BUILDINGS

▲ **Ala., Dothan**—COURT HOUSE—Houston Co. Bd. Revenue, Dothan, plans by Sherlock, Smith & Adams, 303 Washington Ave., Montgomery, court house, $1,000,000.

▲ **Calif., Arcadia**—SCHOOL—City, Arcadia School Dist., 1000 Elmonte Blvd., voted $2,500,000 bonds May 26, schools. CD 2/29/52.

Calif., Clovis—SCHOOL—Clovis Union High School Dist., Box 338, plans by Wm. Hastrup, Anglo Bank Bldg., Fresno, high school addn. $750,000. CD 4/8.

▲ **Calif., Glendale**—SCHOOL—Glendale Unified School Dist., 411 E. Wilson Ave., voted $10,250,000 bonds May 26, schools. CD 5/7.

Calif., Grossmont—SCHOOL—Grossmont High School District, Grossmont, plans by Kistner, Curtis & Foster, Spreckles Bldg., San Diego, 1 story, frame, stucco El Cajon High School between First and Mollison Sts., El Cajon, $500,000. CD 5/1.

▲ **Calif., Los Angeles**—CONVENTION CENTER—City, City Hall, defeated $27,000,000 bonds May 26, convention center. CD 5/5.

Calif., Modesto—JAIL—Stanislaus Co., Court House, plans by Russell Guerne, de Lappe & Mitchell Van Bourg, Claremont Hotel, Berkeley, county jail, $850,000.

Calif., Sanger—SCHOOL—Sanger Union High School Dist., voted $850,000 bonds, schools.

Calif., Sonoma—HOSPITAL—Sonoma Valley Dist. Hospital, plans by DeLappe & Van Bourg, Claremont Hotel, Berkeley, hospital, $300,000. CD 2/19/48.

Conn., Waterbury—SCHOOL—City, Dr. J. J. Gilmartin, supt. Schools, Waterbury, plans by Francis L. S. Mayers 126 Bedford St., Stamford, Woodrow Wilson School addn. $350,000.

Del., Dover—SCHOOL—Dover Special School Dist., plans by Walter Carlson, 1014 Delaware Ave., Wilmington, elementary school, $750,000.

▲ **Ga., Americus**—HIGH SCHOOLS—Sumter Co. Bd. Educ., Americus, plans by Stevens & Wilkinson, 157 Luckie St. N. W. Atlanta, White High School, $500,000; Negro High School, $500,000.

▲ **Ga., Rome**—SCHOOL—Floyd Co. Bd. Educ., Rome, bond election June 16, school imprvs. $1,500,000. CD 8/27.

Idaho, Pocatello—COUNTY BLDG., JAIL—Bannock Co., Court House, voted bonds May 16, county bldg. and jail. $750,000.

Ind., Beech Grove—SCHOOL—School Holding Corp., Lynton Gearhart, pres., Beech Grove., plans by McGuire & Shook, 1400-01 Fletcher Trust Bldg., Indianapolis, 1 story H-shaped Junior-Senior High School, Troy Ave. and Cleveland St. $950,000. CD 4/16.

▲ **Ind., Indianapolis**—SCHOOL—Washington Township School Bldg. Holding Co., C. A. McKamey, twp. trustee, 654 E. 49 St., Township High School. $2,500,000. CD 2/12/52.

▲ **Kan., Olathe**—SCHOOLS—Bd. Educ., Johnson Co., Rural High School Dist., voted $6,000,000 bonds May 19, 4 junior high schools. CD 5/6.

Ky., Richmond—DORMITORY—Eastern State Teachers College, Richmond, plans by Brock & Johnson, 144 Barr St., Lexington, men's dormitory, $465,000. CD 6/13/51.

▲ **La., Bastrop**—SCHOOL—Morehouse Parish School Bd. plans by Smith & Padgett, 512 Ouachita Bank Bldg., Monroe, high school. $1,050,000. CD 1/16.

▲† **La., New Orleans**—SALVAGE STORAGE—U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex., plans by Rosenthal, Kessels, Jones-Godat & Assoc., engr.-archt., The California Bldg., salvage storage with concrete storage bins and conveyors, Michoud Ordnance Plant, $5,000,000.

Mass., Dartmouth—SCHOOL—Town, School Bldg. Comn., Dr. E. D. Fresitas, plans by Tallman-Labrode & Rounseville, 222 Union St., New Bedford, 2 elementary schools, $800,000.

▲ **Mass., Lowell**—SCHOOL—City, City Hall, plans by M. A. Dyer Co., 24 School St., Boston, Junior High School, Highlands area, Flemmings and Van Greenby Rd., $1,000,000. CD 12/28/51.

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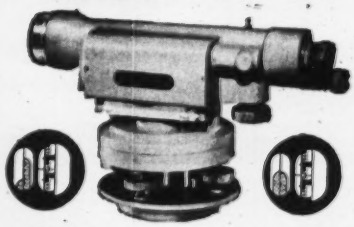

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▲ **Mass., Norton**—SCHOOL—Town, Elementary School Bldg. Comm., plans by Harold Knigh, 11 Beacon St., Boston, elementary school, $700,000 to $1,000,000, Fay-Spofford & Thorndike, 11 Beacon St., Boston, consult. engrs.

Mass., Weymouth—SCHOOL—Town, E. S. Mapes, supt. Schools, 89 Middle St., elementary school adjacent to high school, $561,000; elementary school, Eldon Johnson School addn., $300,000.

Mich., Big Rapids—SCHOOL—City, George Granger, city mgr., defeated $550,000 bonds, school. CD 4/21.

▲ **Mich., Hastings**—SCHOOLS—Bd. Educ., voted bonds, elementary school First Ward, $348,500; elementary school Second Ward, $347,100, high school addns., imprvs., $965,000. Louis C. Kingscott & Assoc., Inc., 511 Monroe St., Kalamazoo, archts. CD 3/10.

Mich., Monroe—SCHOOL—Custer Consolidated School Dist., voted $410,000 bonds, Custer Elementary School addn., W. T. Anicia, 617 Forest Ave., Ann Arbor, archt. CD 5/14.

▲ **Mich., Mount Pleasant**—SCHOOL—Bd. Educ., defeated $1,200,000 bonds, high school. CD 5/7.

Mich., Port Huron—HEALTH BLDG.—St. Clair Co., Bd. Suprvs., Court House, plans by Wyeth & Harman, 1602 Military Ave., 2 story, public health bldg., $300,000.

Minn., Annandale—SCHOOL—Bd. Educ., R. Rosseau, clk., plans by H. H. Swanson, 500 Sexton Bldg., Minneapolis. 1 story, bsmt., school, $450,000.

Minn., Belle Plaine—SCHOOL—Bd. Educ., W. J. Gatz, clk., voted $795,000 bonds May 20, high school, H. H. Swanson, 500 Sexton Bldg., Minneapolis, archt.

Minn., Chatfield—SCHOOL—Bd. Educ., L. J. Kivell, clk., plans by H. H. Swanson, 500 Sexton Bldg., Minneapolis, grade school addn., $400,000.

Neb., Kearney—SCHOOL—State Bd. Control, Lincoln, plans by John Latenser & Sons, 1307 Farnam St., Omaha, Kearney Boys Training School addn. $500,000. CD 4/10.

Neb., Omaha—SCHOOL—Bd. Educ., 3902 Davenport St. plans by L. A. Daly Co., Insurance Bldg., West Side Elementary School. $650,000. CD 5/8/50.

▲ **N. Y., Brooklyn**—SCHOOL—Bd. Educ., 49 Flatbush Ave. Ext. Zone 1, plans by Unger & Unger, 130 Broadway, Zone 11, P. S. 93 alterations, at 21-55 New York Ave., $1,000,000.

▲ **N. C., Goldsboro**—SCHOOL IMPRVS.—Wayne County Bd. Educ., Goldsboro, bond election July 7 school imprvs. $2,336,000. CD 3/6.

O., Bellaire—HOSPITAL—Bd. Trustees, City Hospital, Bellaire, hospital addn. $900,000.

O., Lakewood—LIBRARY—Bd. Trustees Lakewood Public Library, Lakewood, bond election Nov. 3, library addn., Detroit and Arthur Aves. $500,000. Garfield, Harris, Robinson & Schafer, 1740 E. 12 St., Cleveland, archts.

▲ **O., Massillon**—HOSPITAL—City, Massillon City Hospital addn. $1,239,213.

Pa., Altoona—SCHOOL—Bd. Educ., 6 Ave. and 14, plans by Hunter, Caldwell & Campbell, 3601 Fifth Ave., 1 story steel, brick, block grade school addn., Pleasant Valley, $389,625.

▲ **Pa., Clearfield**—HIGH SCHOOL—Clearfield Area School Dist., Clearfield, plans by Hunter, Caldwell & Campbell, 3601 Fifth Ave., Altoona, brick, steel Senior High School, $2,400,000. CD 10/24/52.

▲ **Pa., Marion Center**—HIGH SCHOOL—North Indiana County Joint School Auth., Marion Center, plans by Walter F. Rittenhouse, Boarts Bldg., Kittanning, 2 story 60x500 ft. brick, block high school addn. $1,050,000.

Pa., Morgan—SCHOOL—School Dist., S. Fayette Twp., Morgan, plans by Beall & Parkins, Washington Trust Bldg., Washington, 1 story 60x300 ft., brick, steel frame grade school, S. Fayette Twp., near here. $300,000.

S. C., Bishopville—SCHOOLS—Lee County Bd. Educ., Bishopville, Dennis High School, $400,000. Dennis Elementary School, $375,000.

▲ **Tenn., Johnson City**—SCHOOLS—Washington Co., Johnson City, schools imprvs. and addns. $1,200,000.

Tenn., Oneida—HOSPITAL—Scott Co., Oneida, hospital, $520,000.

Tex., Garland—POWER PLANT—City, Phase 1, electric power plant expansion, $438,000. Forrest & Cotton, Praetorian Bldg. Dallas, Tex., consult. engrs. CD 5/20.

Tex., Goose Creek—SCHOOLS—Goose Creek School Bd., Baytown, plans by H. Voelcker & Assoc., 1202 Dennis St., Junior High School addn. $300,000; plans by Lowell Lammers, Baytown, combination work expans. of Lee Senior High School, $335,000; plans by Jack Reber and Dan Perkins, Baytown, imprvs., expans. to Horace Mann and 2nd Junior High School, $315,000. CD 5/28.

Tex., Houston—SCHOOLS—East and Mount Houston Independent School Dist., E. Houston Rd., voted bonds May 30, high school addn. $315,000; new elementary school, $350,000; school addn. $335,000.

Tex., Irving—SCHOOLS—City, Irving Independent School Dist., Irving, plans by Thomas, Jameson & Merrill, 820 N. Harwood St., Dallas, grade school, $325,000; high school-auditorium, $350,000; elementary school, $325,000; gymnasium, $300,000. CD 5/15.

▲ **Tex., Killeen**—HIGH SCHOOL—Killeen Independent School Dist., Killeen, plans by George Christensen, 719 St. Paul St., Dallas, high school, $1,121,400. CD 3/10.

Tex., Olton—SCHOOL—Olton Independent School Dist., Olton, school. $300,000.

▲ **Tex., Tyler**—SCHOOLS—Bd. Educ., Tyler Independent School Dist., Tyler, voted bonds May 29, new Junior High School, $775,000; elementary school addn., $400,000; new elementary school, $325,000.

Tex., San Antonio—SCHOOL—Northeast Rural High School Distr., Cherokee Lane, San Antonio, plans by Atlee B. & Rob. M. Ayers, Transit Tower San Antonio, Tex., elementary school, Coker Area, $300,000. CD 4/29.

Va., Charlottesville—SCHOOLS—School Bd., Charlottesville elementary school, Long St. $655,306; elementary School, Cherry St. $635,502.

▲ **Va., Courtland**—SCHOOLS—Southampton County School Bd. Courtland, voted $1,000,000 bonds, consolidated high school, four elementary schools and high school addn. $1,530,000.

Va., Lynchburg—SCHOOL—City Bd. Educ., Lynchburg, Va., Perrymont Ave. Elementary School. $350,000.

Vt., Montpelier—HIGH SCHOOL—Union High School Dist., Charles D. Sawyer, supt. Schools, Capitol Apartments Co, Montpelier, Union High School. $500,000.

W. Va., Moundville—HIGH SCHOOL—Bd. Educ., Marshall Co., Moundville, plans by Frederick Faris, 1117 Chaplin St., Wheeling, high school. at Cameron. $514,500.

Alaska, Anchorage—CIVIC AUDITORIUM—City, City Hall, bond election June 23, civic auditorium, $375,000. CD 7/2/52.

Alta., Taber—HOSPITAL—Municipal Hospital Dist., plans by J. A. Cawston, Barron Bldg., Calgary, 2 story hospital addn., $320,000.

Que., Ste. Thecle—SCHOOL, etc.—School Comn., Robt. Cloutier, secy., plans by A. Lacourslere, 230c des Cedres St., Shawinigan Falls, school and residence. $300,000.

COMMERCIAL BUILDINGS

Ala., Birmingham—SYNAGOGUE—Knesseth Israel Congregation, 630 N. 17 St., plans by Pemberton & Mims, Title Guarantee Bldg., Birmingham, Ala. synagogue, $300,000.

▲ **Ariz., Phoenix**—APARTMENT BLDGS.—Samuel G. Bialac & Son, 454 S. Crescent Dr., Beverly Hills, plans by Ralph Haver, 207 E. Camelback Rd., Phoenix, masonry 1,500-unit apartment bldgs. and shopping center, 32 and Thomas Rds., Park, Lee Alice Sts. $3,827,000.

Calif., Garden Grove—DWELLINGS—Ingram & Steele Assoc., 1592 S. Coast Blvd., Laguna Beach, plans by Hugh Gibbs, 441 E. 1 St., Long Beach, 103 frame, stucco, dwellings, Chapman and Euclid Aves. $750,000.

Calif., Riverside—DWELLINGS—Artisan Building Co., 12512 Inglewood Ave., Hawthorne, plans by Dorthi Drafting Service, 6338 Crenshaw Blvd., Los Angeles, 50 frame, stucco dwellings, $350,000.

Calif., San Rafael—HOMES—Goheen-Travis Corp., P. O. Box 273, Mill Valley, 4,000 homes on Frietas Home Ranch, $450,000.

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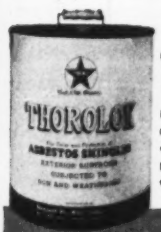

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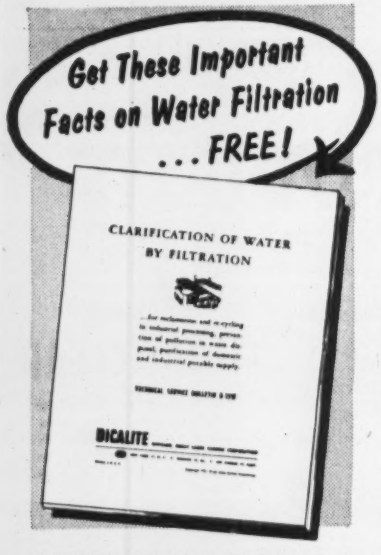

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Calif., Santa Ana—DWELLINGS—Watt Constr. Co., 5127 Crrenshaw St., Gardena, 75 frame, stucco dwellings, Washington and Artesia Sts., $600,000.

Calif., Van Nuys—DWELLINGS—Burco Inc., 7462 Lankershim Blvd., North Hollywood, 97 stucco dwellings, on Willard, Potter and Cantara Sts. $900,000.

▲ **Calif., West Covina**—DWELLINGS—Diller & Kalsman, 8549 Wilshire Blvd., Beverly Hills, plans by Martin Stern, 450 N. Beverly Dr., Beverly, Hills. 1,600 frame, stucco dwellings. $10,000,000.

Calif., Woodside—HOMES—Owner, c/o J. Lloyd Conrich, archt., 593 Market St., San Francisco, 45 homes at site. $400,000.

Colo., Littleton—SHOPPING CENTER—J. Sherman Brown, Littleton National Bank Bldg., plans by Miles Lantz & Co., engrs.-archts., 933 Sherman St., Denver, 1 story, 28,000 sq. ft. shopping center. $325,000.

Ga., Atlanta—CHURCH—Druid Hills Baptist Church, Ponce De Leon Ave., plans by Barill & Humphrys, Forsyth Bldg., church. $700,000. CD 5/21.

Kan., Kansas City—HOTEL—John M. Dickey, Phillipsburg, 45-unit hotel, 4125 Rainbow Blvd., near University of Kansas Medical Center, $300,000.

Md., Baltimore—HOUSES—Gwynn Building Co., 208 E. Lexington St., thirty-one 2 story, 18x30x25 ft., brick houses, 6100 block Chinquapin Pkwy., $310,000.

Mass., Brockton—SHOPPING CENTER—Davis Real Estate Corp., 157 Main St., Brockton, 33,000 sq. ft. shopping center, incl. 24 stores, $300,000.

Mass., Canton—RESIDENCES—Salford Realty Co., Canton, 50 residences, $300,000.

Mass., Milton—SCHOOL—Jean D'Arc Academy and Archbishop Richard J. Cushing, DD-LLD-B Boston Chancery Office, Lake St., Brighton, school addn., 1071 Blue Hill Ave. $300,000.

Mass., Salem—SHOPPING CENTER—F. P. Morgan Co., 45 Milk St., Boston, plans by Sumner Schein, 271 Huntington Ave., Boston, Tedesco Shopping Center, 6 bldgs., near Tedesco Country Club. $300,000.

Mass., Swampscott—SYNAGOGUE—Temple Israel, Rabbi Abraham L. Karp, 837 Humphrey St., plans by Pietro Belluschi & Carl Koch, 55 Brattle St., Cambridge, synagogue. $400,000.

Mass., Worcester—DORMITORY—Assumption College, 670 W. Boylston St., plans by O. E. Nault & Sons, 48 Hamilton St., 3 story, bsmnt., dormitory, $300,000.

▲ **Mo., St. Louis**—HOSPITAL—Evangelical Deaconess Society of St. Louis, c/o Deaconess Hospital, Rev. Dr. Elmer H. Hoefer, chn. bd. directors, 6150 Oakland Ave., Zone 10, plans by Charles M. Gray and Jamieson, Spearl, Hammond & Grolock, 1696 Arcade Bldg., 812 Olive St., Zone 1, 4 story, bsmnt., 130x182 ft. hospital addn. for mentally and chronically ill patients, $2,000,000. CD 12/10/52.

N. H., Manchester—CHURCH—St. Anthony's Church, Roman Catholic Diocese of Manchester, Rt. Rev. Mathew E. Brady, Bishop, 51 Walnut St., plans by Albert J. Roy, 120 Front St., Worcester, Mass., church. Approx. $330,000.

▲ **N. J., Livingston**—SHOPPING CENTER—Messing Assoc., 342 Madison Ave., New York 17, N. Y., plans by Levien Assoc., 450 Seventh Ave., New York 1, N. Y., shopping center and parking for 6,500 cars south side of Rte. 10 at Livingston Traffic Circle. $3,000,000.

N. Y., Astoria—APARTMENT—BBF Constr. Co., c/o M. M. Elkind, archt., 74-09 37 Ave., Jackson Heights, 3 story, 127x156 ft. apartment, north side of 30 Dr. east of Crescent St. $300,000.

▲ **N. Y., Flushing**—APARTMENTS—Berkel Assoc., c/o M. N. Weston, archt., 144 Court St., Brooklyn, Zone 2, two 2 story apartments, Kissena Blvd., Franconia Ave. and Union St. $1,848,600.

N. Y., Jamaica—HOSPITAL—Briarwood General Inc., c/o M. M. Elkind, archt., 74-09 37 Avenue, Jackson Heights, 3 story, hospital on east side of Main St. between Lander St. and 84 Road. $700,000.

N. Y., New York—APARTMENT 11 East 87 Street Corp., 200 W. 72 St., plans by Tito DiVincenzo, 2 Columbus Circle, Zone 19, apartment at 11 E. 87 St. $650,000.

N. Y., New York—APARTMENT—Gorside Building Corp., 110 E. 177 St., Zone 53, plans by H. Herbert Lilien, 201 W. 72 St., Zone 23, 6 story apartment, 236 St., northeast corner of Oxford Ave. $510,000.

N. Y., New York—SCHOOL—Trinity Parish, 74 Trinity Pl., Zone 6, 1 story elementary parochial school, Greenwich and Christopher Sts. $750,000.

N. C., Jacksonville—CHURCH—Trinity Methodist Church, Jacksonville, church, $300,000.

▲ **O., Cincinnati**—DWELLINGS—Harvey H. Richman & Assoc., 4200 Redwood Terrace, 175 Redwood Terrace, 175 one-family dwellings, North Bend Rd., opposite Daly Rd., Finneytown. $5,000,000. Nunlist & Frolicher, Trac Bldg., consult. engrs.

Okla., Oklahoma City—HOSPITAL ADDN.—Mercy Hospital, 501 N. W. 12 St., plans by Noftsger & Lawrence, 2756 N. W. 23 St., Mercy Hospital addn., $360,000.

Pa., Crafton—HIGH SCHOOL—St. Phillips Roman Catholic Congregation, Crafton, plans by Vincent J. Schoenman, 248 Fourth Ave., Pittsburgh, 2 story brick, tile parochial high school addn. $300,000.

S. C., North Augusta—CHURCH—St. Bartholomew's Episcopal Church, c/o F. Arthur Hazard, archt., Marion Bldg., Augusta, church. $325,000.

Tenn., Oneida—HOSPITAL—LaFollette Hospital, Oneida, hospital, $500,000.

Tex., Brownsville—STORE—Neisner Bros. Inc., c/o General Delivery, Brownsville, 22,400 sq. ft. masonry type store, $300,000. J. C. Pierson, ch. engr.

▲ **Tex., Corpus Christi**—BUILDINGS—University of Corpus Christi, Ward Island, plans by Harland Bartholomew & Assoc., 317 N 11 St., St. Louis, Mo., main admin. bldg., auditorium, $2,500,000; laboratories, $1,000,000; classrooms, $4,000,000; dining halls, $750,000; men dormitories, $2,000,000; heating and power plant, $350,000; women dormitories, $2,500,000; gymnasium, $750,000; stadium, athletic field, $225,000; water sys., $100,000; sanitary sewerage sys., $200,000; lighting distr. sys., $150,000; general area, or campus paving, $250,000; drainage sys., $150,000; natural gas distr. sys., $100,000; misc. constr. of any allied bldgs. and facilities, $3,825,000.

Tex., LaMarque—DWELLINGS—Greenwood, Inc., c/o T. J. Mogatto & Assoc., LaMarque, 36 frame dwellings, $300,000; 34 brick veneer dwellings, $400,000; 30 frame, masonry trim dwellings, $300,000;

Tex., Midland—STORE, OFFICE—Basin Supply Co. 103 S. Main St., Midland, plans by Chas. Neuhardt, 2211 S. W. Front St., Midland, 20 story, masonry type store and office, $300,000.

Tex., Port Arthur—SCHOOL—Trinity Lutheran Church, 3349 Thomas Blvd., plans by Harry A. Turner, archt. and Chas. E. Geyer, assoc. archt., 2502 Robinhood St., Houston, 1 and 2 story 62x130 ft., 37x88 ft. wing brick, rein.-con. school, $300,000. Walter P. Moore, 2 Pinedale St., Houston, consult. engr.

▲ **Utah., Provo**—APARTMENTS, etc.—Brigham Young University, Provo, plans by Fred L. Markham, 45 North University St., Provo, Fetzer & Fetzer, 415 Zions Savings Bank Bldg., Salt Lake City, 21 apartments and dormitory bldgs. to house 960 women and 800 men (first unit), academic and service bldgs., $10,000,000.

Vt., Montpelier—BUILDING—Vermont Mutual Fire Insurance Co., 114 State St., plans by Weber & Erickson, 56½ Merchants Row, existing bldg. remodelled and 2 stories addns. $315,000.

▲ **Wash., Seattle**—MARKET—Buford's Farmers' Market c/o B. Seals Jr., 2012 43 Ave. N., plans by A. D. Poe, 3521 E. 96 St., 58,000 sq. ft. building to house produce stands, restaurants, drug store, department store, service station and shops, $1,500,000. CD 3/4,

Wash., Spokane—DORMITORY—Holy Names College, E 1000 Boone St., plans by H. C. Bertleson, Empire State Bldg., 25,736 sq. ft. masonry women's dormitory, $350,000.

Wis., Fond du Lac—HIGH SCHOOL—Winnebago Lutheran Academy, Fond du Lac, plans by Steffen & Kemp, 7218 W. North Ave., Wauwatosa, Zone 13, 129x354 ft. high school and gymnasium.

Wis., Manitowoc—HOME FOR AGED—Felician Sisters, 8425 S. Saginaw St., Chicago, Ill., St. Marys Home for Aged, S. 20 St., plans by F. W. Raeuber, 1024 S. 9th St., 2 and 3 story 190x313 ft., bsmnt., home for aged. $700,000.

B. C., Nanaimo—DEPARTMENT STORE—Simpson Sears Ltd., 176 Yonge St., Toronto, Ont., plans by Polson & Siddell, 1618 W. 4 Ave., Vancouver, department store, Gordon St., $400,000. CD 5/1.

N. S., Halifax—OFFICE—Imperial Oil Ltd., 2000 Sherbrooke St. W., Montreal, plans by Ross, Patterson, Townsent & Fish, Dominion Square Bldg., Montreal, 4 story, bsmnt., 74x115 ft., rein.-con., brick, stone office, $500,000.

Que., Fort Chambley—CONVENT—Convent Administration of Val Marie, 32 Richilieu St., Fort Chambley convent. $300,000,

Que., Shawinigan Falls—STORE and OFFICE—Robert Bourassa (Robert Bourassa, Inc.) 25 Cascade St., plans by A. Lacoursiere, 23c des Cedres St., 3 story, 113x136 ft., structural steel, rein.-con., brick, terra cotta store and office, 5 and Station Ave. $350,000.

INDUSTRIAL BUILDINGS

Ala., Leeds—PLANT—Crown Cork & Seal Co., 5 S. Haven St., Baltimore, Md., plans by Van Keuren, Davis & Co., 3004 Seventh Ave. S., Birmingham, plant. $750,000. CD 3/30.

Ark., Little Rock—WAREHOUSE—Sadler-Ross Motor Co., 10 and Spring Sts., warehouse, $125,000.

Ark., Magnet Cove—PLANT—Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O., synthetic rubber powder plant, $300,000.

Calif., Lancaster—PLANT—Antelope Valley Turkey Growers Assn., c/o James W. Wisda, engr., 6314½ San Vicente Blvd., Los Angeles, 24,000 sq. ft. tilt-up concrete plant, $100,000.

Calif., North Hollywood—WAREHOUSE—J. J. Newberry Co., 314 W. 6 St., Los Angeles, plans by Lopatin & Patterson, 672 S. Lafayette Park Pl., Los Angeles, 120,000 sq. ft. tilt-up concrete warehouse, $500,000.

Conn., Milford—FACTORY—Assembled Products Inc., Factory Lane, plans by Leo F. Caproni, 1221 Chapel St., New Haven, factory off Cherry St., $300,000.

▲ **Ga., Cleveland**—MILL—Lowell Mills, c/o The McPherson Co., archts., P.O. Box 2366, Greenville, S. C., mill. $2,000,000.

▲ **Ga., Savannah**—PLANT—National Gypsum Co., Brampton Rd., plant addn. $1,000,000.

Ill., Chicago—FACTORY—Manhattan Royal Crown Corp., 2837 W. 47 St., plans by Herman & Salzman, 53 W. Jackson St., Zone 4, factory, $350,000.

Ill., Quincy—BOILER—Central Fiber Products Co., Quincy, boiler and boiler bldg. $100,000. H. M. Wilson Co., 18th and Brandywine Sts., Phila., Pa., consult. engrs.

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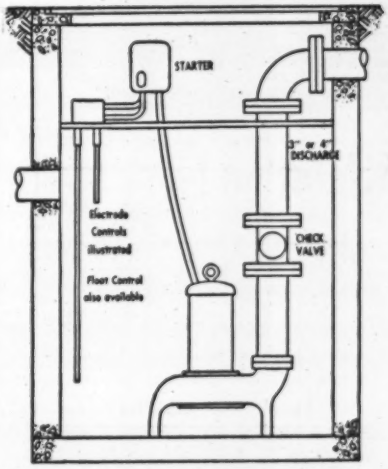

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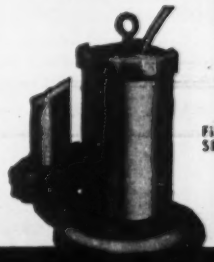

Fig. SE 860

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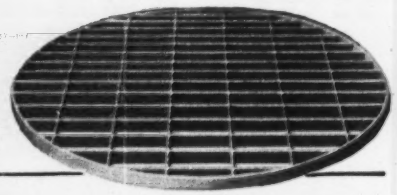

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Mo., Kansas City—GARAGE—Joseph A. Bruening Co., Board of Trade, 3-level parking garage 10 St. and Wyandotte Sts., Central, $500,000.

Mo., St. Louis—WAREHOUSE AND OFFICES—Rice-Stix Dry Goods Co., 1000 Washington Ave., Zone 1, sales and warehouse bldg., offices, west side of 12 Blvd. between Biddle and Cole Sts., $500,000.

N. H., Hampton—FACTORY—Capital Floketc Co., Inc., 9 Exeter Rd., suede factory. $100,000.

N. Y., Brooklyn—FACTORIES—Milton Hoffman, 655 Berriman St., Zone 8, plans by Jack Fein, 44 Court St., Zone 2 four 1-story factory, 979-95 Linwood St., 914-18 Linwood St. and 902-12 Essex St. $130,000.

N. Y., Cobleskill—PLANT—Schoharie County Co-op Dairy, Inc., Cobleskill, plans by Charles H. Wurster, 3617 N. Broad St., Phila., Pa., milk processing plant, $150,000.

▲ N. C., Washington—PLANT—National Spinning Co., 350 Fifth Ave., New York, N. Y. plant, $1,000,000. Wm. F. Freeman Engineers, High Point, consult. engr.

O., Columbus—WAREHOUSE—Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, 1 story brick, steel warehouse.

Pa., Pittsburgh—WAREHOUSE—Baehr Bros., 801 Walnut St., McKeesport, plans by Stuart & Blezard, 901 Ridge Ave., 1 and 2 story, 20,000 sq. ft. steel frame, brick, block warehouse and office at Greentree, $300,000. National Biscuit Co., 449 W. 14 St., New York, N. Y., lessee.

S. C., Greenwood—FOUNDRY—Van Bergen Bell Foundries, Heiligerlee, The Netherlands, Holland, Europe, foundry to mfg. carillion bells, $100,000.

S. C., Laurens—PLANT—Laurens Shirt Co., Laurens plant, $100,000.

Tex., Coleman—PLANT—Luling Oil & Gas Co., Luling, new unit for natural gasoline plant in Glen Cove field. $350,000.

Tex., Fort Worth—POLYMERIZATION UNIT—Premier Oil Refining Co., Longview, addnl. polymerization unit at refinery, $275,000. CD 5/24/51.

Tex., Houston—WAREHOUSE ADDN.—Glazier Wholesale Drug Co., 3202 Harrisburg St., plans by Geo. W. Edwards, 1509A Cochran St., Dallas, Tex. 2nd story, 60x255 ft., solid brick warehouse addn. $175,000.

Tex., Houston—PLANT—Gould-National Batteries Inc. First Natl Bank Bldg., St. Paul, Minn., 50,000 sq. ft. 1 story, preformed concrete exterior walls battery mfg. plant, $425,000.

▲ Tex., Houston—REFINERY—Warren Petroleum Corp., City Natl. Bank Bldg., hydrocarbon oxidation process refinery unit, 400-acre tract on ship channel. $2,500,000.

Tex., Lubbock—GARAGE—Bennett Motor Co., 3819 31st St., plans by Butler-Brasher Co., 412 Avenue M, 100x150 ft. rein.-con. pier and beam fdn. auto sales, garage. $125,000.

Utah, Salt Lake City—TRUCK TERMINAL—Garrett Freight Lines, Inc., 145 W. 5 South St., plans by Scott & Beecher, Dooly Bldg., Salt Lake City, truck terminal on Redwood Road. $500,000.

Alta., Calgary—WAREHOUSE, etc.—General Steel Wares Ltd., 199 River St., Toronto, Ont., plans by J. A. Cawston, Barron Bldg., Calgary, Alta., 1 story, 180x20 ft. warehouse with offices, 24 Ave. and 16 East. $200,000.

▲ Alta., Edmonton—PLANT—Building Products Ltd., 240 S. Patrick St., Bille La Lalle, plans by Rule, Wynn & Rule, 11422 Jasper Ave., Edmonton, plant addn. on Hy. 16, $1,000,000.

UNCLASSIFIED

Ala., Maplesville—GAS SYSTEM—City, natural gas sys. $275,000.

Fla., Naples—BEACH PAVILION—City, bathing beach and pavilion. $200,000.

Fla., Sarasota—MAUSOLEUM—Sarasota Memorial Park c/o C. Dale Dykema, archt., 16901 Gulf Blvd., St. Petersburg, Mausoleum $125,000.

Georgia—RURAL DISTRIBUTION LINES—Central Georgia Electric Membership Corp., Jackson, 72 mi. rural distr. lines, sys. imprvs., Butts Co. $325,000.

† Idaho, Arco—TRANSMISSION LINE, etc.—Idaho Operations Office, U. S. Atomic Energy Comn., Idaho Falls, 18 mi. transmission line, electrical substation and accessory structures at National Reactor Testing Station, $200,000. CD3/24/49 under Public Buildings.

Iowa—RURAL DISTRIBUTION LINES—Marshall County Rural Electric Co-operative, Marshalltown, rural distr. lines and sys. imprvs., Marshall Co., $242,000. REA allot. A. W. Grubb, Vinton, consult. engr. CD 7/30/48.

Kentucky—RURAL DISTRIBUTION LINES—Taylor County Rural Electric Co-operative, Campbellsville, rural distr. lines, $195,000, Southern Eng. Co., 1000 Crescent Ave. N. E., Atlanta, Ga., consult. engrs. CD 12/3/47.

Louisiana—RURAL DISTRIBUTION LINES—Southwest Louisiana Electric Membership Corp., Lafayette, 165 mi. rural distr. lines, sys. imprvs., Carencro Rd., Lafayette Co., $520,000.

Miss., Ackerman—NATURAL GAS SYSTEM—City, natural gas distr. sys. $225,000.

Miss., Bruce—NATURAL GAS SYSTEM—City, natural gas distr. sys. $250,000.

Miss., Eupora—NATURAL GAS SYSTEM—City, natural gas distr. sys. $250,000.

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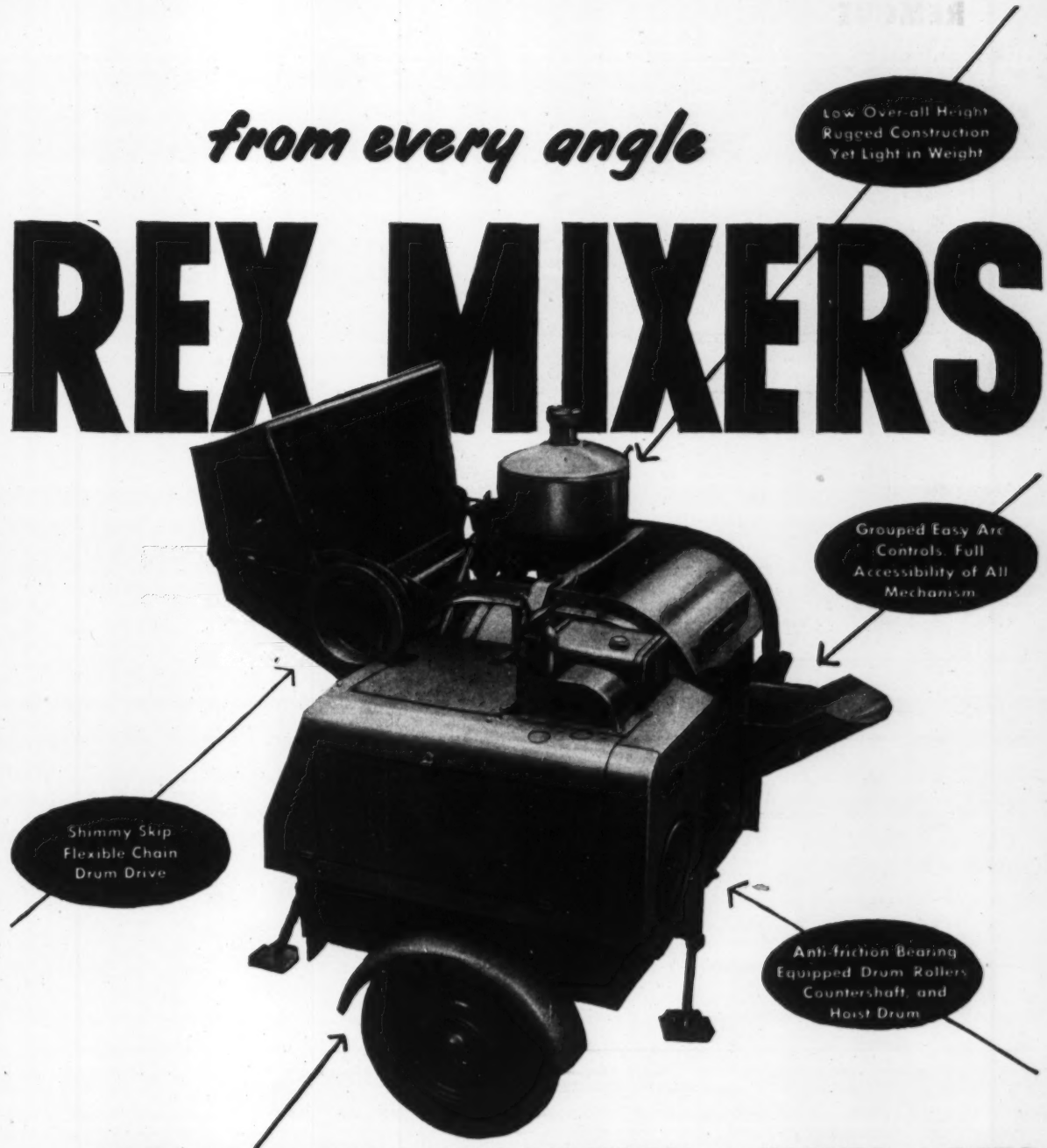

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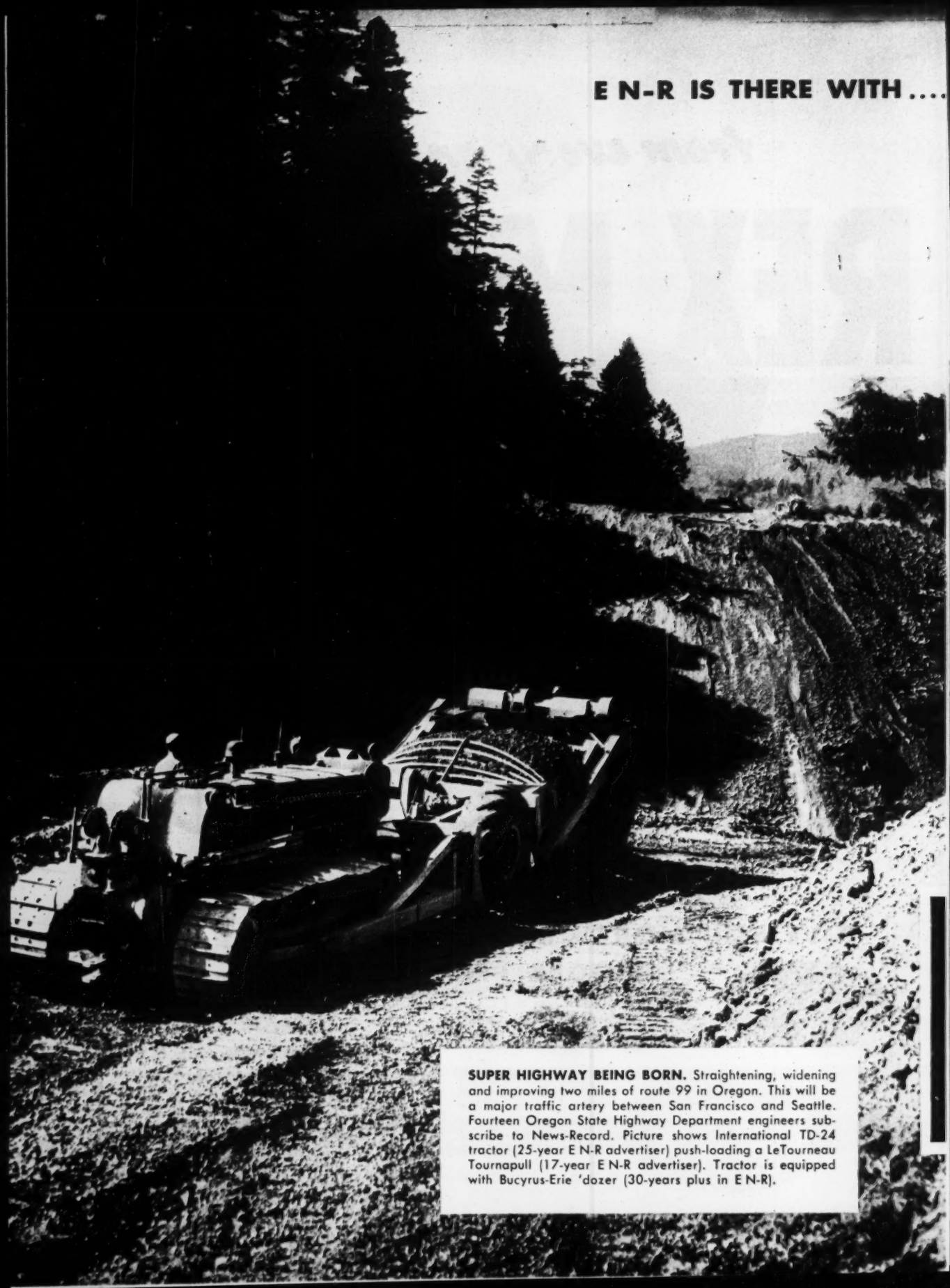

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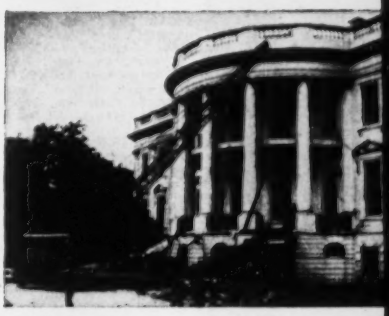
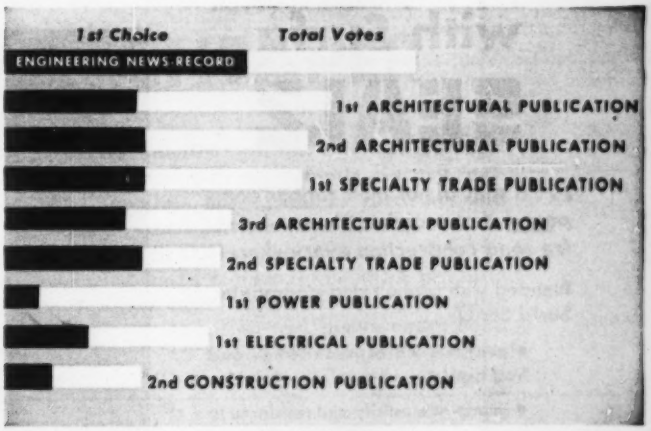


CONSTRUCTION MEN PREFER E N-R—Architect-engineer consultants specializing in buildings also do airport and unclassified construction work. Worked in four widely separated states last year. Management surveyed its own personnel as to reading habits. Here are results:



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▲ **Mo., St. Louis**—PARKWAY—City, c/o Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, $1,500,000 bond election Sept. 29, development of parkway adjoining Aloe Plaza and Memorial Plaza in area from 14 to 18 Sts. Market to Olive St., CD 4/26/43.

† **N. H., Mount Washington**—SKI FACILITIES—State Forestry & Recreation Dpt., R. B. Tobey, State House, Concord, ski facilities, Crawford Notch and Pinkham Notch. $305,000.

New Mexico—RURAL DISTRIBUTION LINES—Central New Mexico Electric Co-operative, Mountainair, 61 mi. rural distr. lines and sys. imprvs., Lincoln Co. $172,000.

New Mexico—HEADQUARTERS FACILITIES—Farmers Electric Co-operative, Clovis, headquarters facilities, Curry Co. $105,000. CD 2/14/50.

O., Worthington—SWIMMING POOL, etc.—Swim, Inc., c/o Bd. Educ., Worthington, 60x163 ft. swimming pool, 40x40 ft. diving pool, small wading pool, dressing rooms, handball, basketball, badminton courts, sunwall west of high school, on W. Granville Rd. $150,000.

O., Dayton—PARKS DIVISION BLDG.—City, City Hall, plans by Hart, Igleburger, Wurst & Assoc., Hulman Bldg., parks division bldg. Chadwick tract near Summit and Edison Sts. $284,000. John Hale, city engr.

▲ **Oklahoma, Arkansas and Louisiana**—OIL LINE—Sunray Oil Corp., 1st. Natl. Bldg., Tulsa, Okla., 8 in. oil products line from Duncan Okla. to Mississippi River. $3,000,000.

Oklahoma—GAS LINE—Oklahoma Natural Gas Co., 401 N. Harvey St., Oklahoma City, 16 mi. 6 and 8 in. gas line to Ardmore Air Force Base. $250,000. CD 9/3.

Tennessee—RURAL DISTRIBUTION LINES—Tri-County Electric Membership Corp., Lafayette, 84 mi. rural distr. lines and sys. imprvs., Macon Co., $740,000.

▲ **Tenn., Chattanooga**—FREIGHT YARD—Southern Railway Sys., J. B. Akers, Ch. Engr., P.O. Box 1808, Wash. 13, D. C., freight yard. $14,000,000.

▲ **Texas-New Mexico**—GAS LINE—El Paso Natural Gas Co., Bassett Tower, El Paso, Tex., 275 mi. gas pipe line from Denver City, Tex., to Jal, N. M. $38,500,000. CD 2/5.

Texas—RURAL DISTRIBUTION LINES—Lone Wolf Electric Co-operative, Colorado City, 20 mi. rural distr. line and sys. imprvs., Mitchell Co. $200,000.

Texas—OIL LINES—Phillips Pipe Line Co., Bartlesville, Okla., laying addnl. field gathering lines (crude oil), near Andrews, Andrews Co. $75,000; some field crude oil gathering lines to connect with owners in Seminole area, Gaines Co. "to Borger main line," $85,000.

Tex., Brownsville—STADIUM—Sams Memorial Foundation, Brownsville, plans by Phelps & DeWees & Simmons, 1501 Majestic Bldg., San Antonio, 10,000 seating capacity concrete, brick stadium, incl. football field, field lighting sys., athletic tracks, warehouse underneath structure. $200,000.

▲ **Tex., Houston**—City, City Hall, 900 Brazos St., rerouting 12 pipe lines, $2,600,000; rerouting Missouri Pacific Ry. tracks, $1,150,000; both through San Jacinto Reservoir Site; build a canal to carry water from San Jacinto Reservoir to Purification plant in Glaena Park, $1,500,000; building water main from San Jacinto Purification plant into city of Houston, $1,250,000; general waterline constr., acct. San Jacinto Water Proj. $2,250,000. Freese, Nichols & Turner, 2111 C & I Bldg., Houston, consult. engrs. CD 2/11.

▲ **Tex., Houston**—WHARVES—Port Comn., Wharf 13, cancelled bond election of June 27, Marine Leg for unloading of grain from barges and ships, $1,500,000; new pallets for loading and unloading terminal, $500,000; new wharf, $4,000,000; covered warehouse, $500,000. CD 5/20.

Tex., Orange—BANK and OFFICE—First National Bank Bldg., Orange, bank and office. $350,000. $350,000.

▲ **Tex., San Antonio**—GAS, ELECTRIC SYSTEMS—City Public Service Board, 201 N. St. Marys St., gas and electric systems expans. and imprvs. $67,000,000; electric sys. imprvs. and expans., underground and above ground lines and some transformers, $5,000,000; natural gas sys. imprvs. and expans., distr. and mains. $5,000,000.

Tex., Texarkana—TELEVISION STATION—KCMC Inc., 317 Pine St., Texarkana, television station, $260,000. Commercial Radio Equipment Co., 1319 F St. N. W., Wash., 4, D. C., consult. engrs.

Tex., Tyler—TELEVISION STATION—Tyler Broadcasting Co., Blackstone Hotel, Tyler, Tex., television station, $200,000. Commercial Radio Equipment Co. 1319 F St. N. W., Wash., 4, D. C., consult. engrs. CD 12/3/52.

Tex., Wichita Falls—TELEVISION STATION—Parker Television Co., 201 Berkeley St., Wichita Falls, television station, $350,000. W. E. Billington, 121 Kennedy St., San Antonio, consult. engr.

Tex., Wichita Falls—TELEVISION STATION—Wichita Falls Television Inc., (KWFT) c/o Kenyon Brown, Box 6120, television station, $260,000. Commercial Radio Equipment Co., 1319 F St. N. W., Wash., D. C., consult. engr.

▲ **Utah-Nevada**—GAS LINE—El Paso Natural Gas Co., Bassett Tower, El Paso, Tex., natural gas main line from Salt Lake City west to Calif. state line, $23,500,000; gas gathering lines, Salt Lake City, $3,500,000.

Utah, Ogden—TELEVISION STATION—Interstate Broadcasting Corp (KLO) Ben Lomond Hotel, television station, $180,000. George E. Gautney, Warner Bldg., Wash., 4, D. C., consult. engr.

Utah, Provo—TELEVISION STATION—KOVO Broadcasting Co. (KOVO) Box 99, television station, $200,000. Millard M. Garrison, 1519 Connecticut Ave., Wash., 6, D. C., consult. engr.

Vt., Montpelier—TELEVISION STATION—Colonial Television Inc., c/o Geo. Agel, Main St., Burlington television station, $100,000. J. Gordon Keyworth, Berkshire Dr., Williamstown, Mass., consult. engr.

▲ **Virginia**—TUNNEL—State Hy. Dpt., 1221 E. Broad St., Richmond, Hampton Roads Tunnel Proj., Norfolk and Elizabeth City Counties, $44,470,000. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York 6, N. Y., consult engrs., will revise plans, prepare specifications and supervise construction. CD 7/3/51.

Va., Hampton—TELEVISION STATION—Peninsula Broadcasting Corp. (WVEC) Box 481, television station, $300,000. Lynne C. Smeby, 1311 G. St. N. W., Wash., 5, D. C., consult. engrs.

Va., Richmond—TELEVISION STATION—Richmond Television Corp., 1013-A East Main St., Richmond, television station, $700,000. Welden & Carr, 1605 Connecticut Ave. N. W., Wash., 9, D. C., consult. engrs.

W. Va., Beckley—TELEVISION STATION—Daily Telegraph Printing Co. (WHIS), 623 Commerce St., Bluefield, television station, $200,000. John A. Mullaney, 2002 "P" St. N.W., Wash. 6, D. C., consult. engr.

W. Va., Parkersburg—TELEVISION STATION—Polan Industries, 321 8 St., Huntington, television station, $190,000. A. D. Ring & Co., Munsey Bldg., Wash. 4, D. C., consult. engrs.

Wis., Milwaukee—TELEVISION STATION—Cream City Broadcasting Co. Inc., (WMIL), 2625 W. Wisconsin Ave., television station, $170,000. Nathan Williams, 20 Algoma Blvd., Oshkosh, Wis., consult. engr.

WIS., Milwaukee—TELEVISION STATION—Northwest Television Corp., 190 N. State St., Chicago, Ill., television station, $490,000. Walter F. Kean, 1 Riverside Rd., Riverside, Ill., consult. engr.

Wis., Milwaukee—TELEVISION STATION—WCAN-TV, 723 N. Third St., television station, $475,000. Russell May, 1422 F St. N.W., Wash. 4, D. C., consult. engr.

Wis., Superior—TELEVISION STATION—Head of The Lakes Broadcasting Co. (WEBC), WEBC Bldg., television station, $290,000.

Wis., Waukesha—SWIMMING POOL—City, swimming pool. $150,000. CD 11/21/45.

Wis., Wausau—TELEVISION STATION—Wisconsin Valley Television Corp., c/o A. F. Berner, WATK, Antigo, television station, $260,000. Walter F. Kean, 1 Riverside Rd., Riverside, Ill., consult. engr.

Wyoming—RURAL DISTRIBUTION LINES—Wheatland Rural Electric Assn., Wheatland, 228 mi. rural distr. lines and sys. imprvs., Platte Co. $320,000. REA allot. C. B. Eng. Co., 25 S. Grove St., Denver, Colo., consult. engr. CD 7/19/46.

▲ **Que., Quebec City**—DOCKS—Municipality, City Hall, constr. docks at foot of Dorchester St., $400,000; reconstr. retaining wall at Samson Hill, $624,270. Ed. Hamel, City Hall, city engr. CD 3/3/44.

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... a special hot melt rubber compound that promises to revolutionize road construction everywhere!

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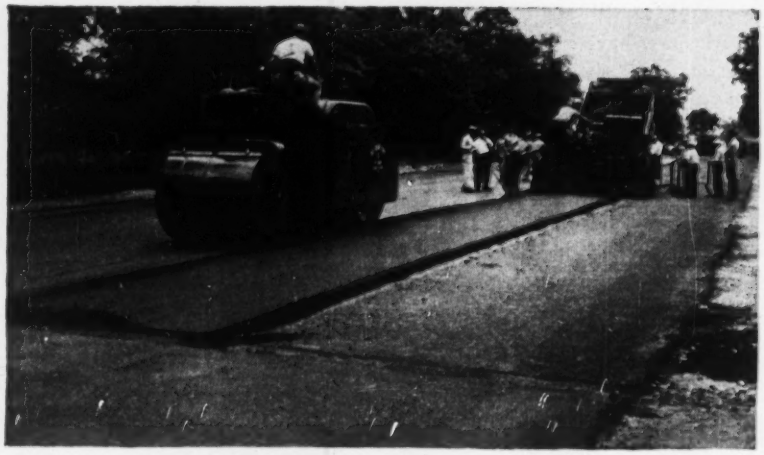

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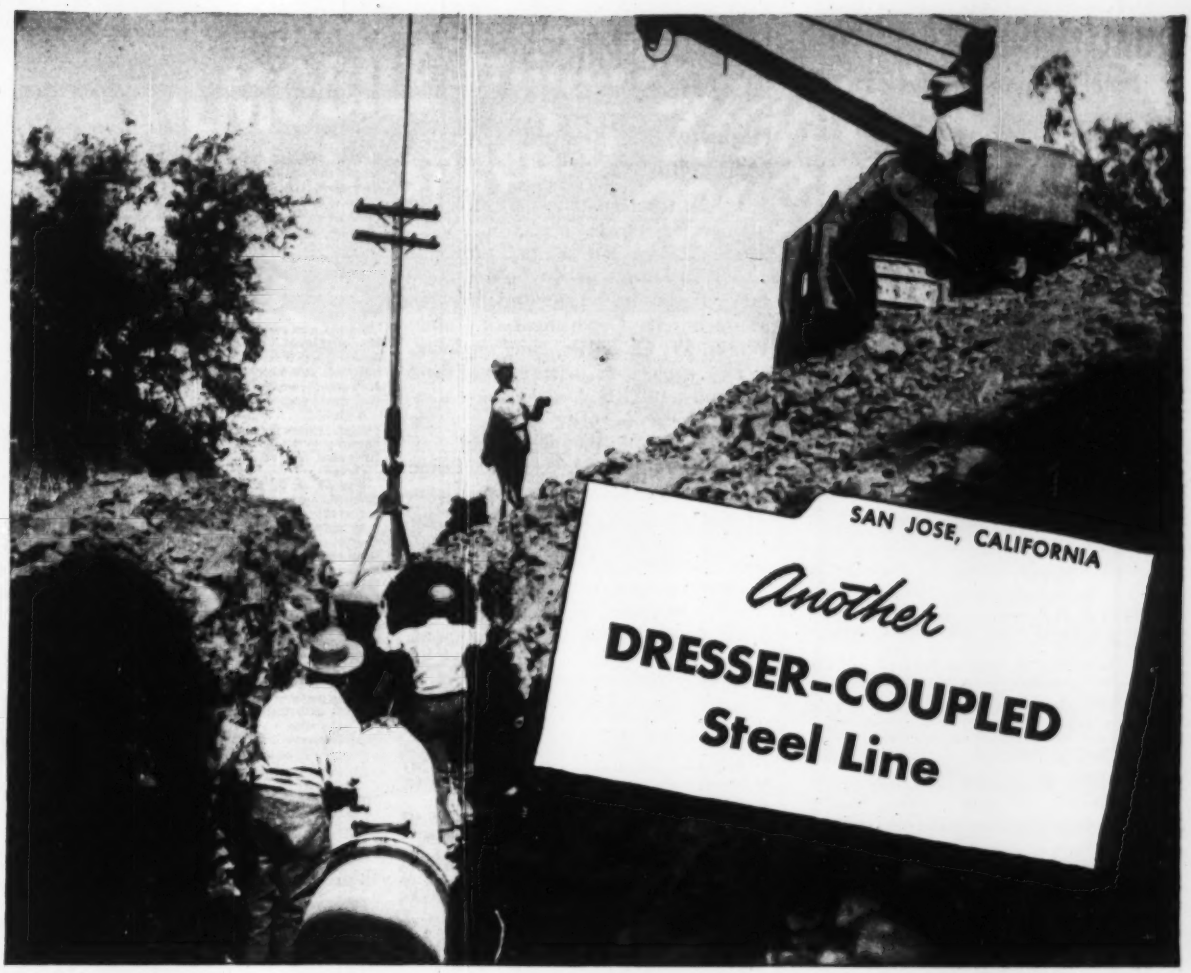

DELIVERS WATER CHEAPER

San Jose installs 12-mile Dresser-Coupled steel line . . . augments water supply from new reservoir.

Crossing the new Water Conservation District reservoir—replacing 8,000 ft. of flume, now submerged—this Dresser-Coupled steel line carries an increased water supply to San Jose, Los Gatos and Saratoga, California. Having installed over 200 miles of steel pipe since 1946, San Jose engineers are well acquainted with the many advantages of Dresser-Coupled construction.

The beam strength of lighter weight steel pipe, plus the resilience of both pipe and couplings, assures a permanently tight line unaffected by surface shock, ground shift or washouts. Rugged coatings make the line impervious to corrosion and incrustation. Glass-smooth pipe linings sustain high flow-coefficients.

Long pipe lengths require fewer joints per mile —reduce laying costs. Small crews, with a minimum of skill, supervision and heavy equipment, make Dresser joints faster, surer—speed construction schedules. This adds up to lower cost, maintenance-free lines.

BE SURE **you get the *best* line at the *best* price. Always put steel pipe and Dresser Couplings in *your* specifications.**

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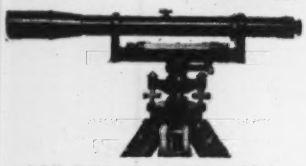

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UNIT PRICES

Highway and Bridges, Massachusetts

A bid, fourteen percent below the engineer's estimate, copped a $1,306,966 road and bridge contract for Campanella & Cardi, lowest of nine bidders. The contract was awarded by the Massachusetts Department of Public Works, W. C. Tuttle, chief engineer.

The project consists of widening 11.6 miles of U. S. 6 making it a divided highway in place of the single roadway recently completed and constructing four concrete rigid frame bridges. The pavement will be 2-lane, 24 ft wide with a 2½-in. bituminous concrete surface over a 4-in. macadam base that tops an 8-in. gravel surface.

Minimum wage rates on the job are: tractor operators, $3.00 per hr; concrete mixed operators, $2.625 per hr; and common laborers, $1.575 per hr.

Bidders include:

1C	Campanella & Cardi Const. Co., Warwick, R. I.	$1,306,966
2	M. De Matteo Const. Co., Quincy, Mass.	1,477,359
9	Coleman Bros. Corp., Boston, Mass.	1,846,442
EE	W. C. Tuttle, chief eng., Mass. Public Works Department	1,525,449

Bids: 1-27-53 Item	Unit	Quantity	Unit Prices 1 C	2
Clearing & grubbing	ac	122.5	$175.00	$195.00
Rdway earth excavation	cy	828,000	0.30	0.29
Class "A" rock excavation	cy	3,200	2.00	2.00
Bridge excavation	cy	6,720	0.75	1.60
Trench excavation	cy	12,000	1.30	1.60
Class "B" rock excavation	cy	350	2.75	8.00
Catch basins, abandoned	ea	3	25.00	40.00
Concrete excavation	cy	118	4.00	20.00
Cutting into conc walls	sf	80	3.00	2.00
Ordinary borrow	cy	99,000	0.40	0.29
Gravel borrow	cy	70,060	0.75	0.85
Sand borrow	cy	800	2.25	4.00
Fine gr, roll & finish	sy	765,000	0.05	0.07
Cr stone for base course	t	44,000	3.80	4.70
Bit for rdway base course	gal	338,000	0.13	0.125
Calcium chloride for surface treatment	lb	94,600	0.05	0.05
Gravel for surfacing	cy	70	2.50	2.00
Bit for surface treatment	gal	30,400	0.40	0.13
Bit for tack coat	gal	100	0.60	0.50
Cl I bit conc pvmnt, type I-I	t	26,500	7.25	7.50
CL I bit conc berms	t	4,760	9.00	9.00
Cl A cmt conc mary	cy	2,175	32.75	38.00
Cl B	cy	2,748	32.75	31.00
Cl C	cy	100	45.00	60.00
Cl D	cy	311	45.00	65.00
Stl reinf for structures	lb	379,650	0.10	0.113
Membrane waterproofing	sy	1,302	3.00	2.75
Waterproofing prot course	sy	1,082	2.25	2.50
Bit damp-proofing	sy	1,155	0.35	0.50
Bal stone walls, rem & reb	lf	20	4.00	2.00
Sawed face granite	sf	1,969	6.00	6.85
Granite end posts	ea	4	350.00	350.00
Granite sidewalks	ea	4	215.00	200.00
Granite coping	lf	1,072	16.00	16.00
Sawed face gran, relocated	sf	101	5.00	5.50
Gran end posts, relocated	ea	6	100.00	175.00
Gran sidewalks, relocated	ea	6	100.00	100.00
Gran coping, relocated	lf	58	5.00	5.50
Catch basins, excl cost of castings	ea	292	90.00	115.00
MH, excl cost of castings	ea	24	90.00	115.00
MH (9' to 14' deep) excl cost of castings	ea	4	300.00	300.00
Gutter inlet, excl cost of castings	ea	1	90.00	75.00
Catch basins, MH or LB adjusted to line A-O grade	ea	11	30.00	30.00
Catch basins or MH, change in type, excl cost castings	ea	3	35.00	80.00
Catch basins or MH remodeled excl cost of castings	ea	2	35.00	75.00
12" reinf conc pipe	lf	12,400	2.25	2.30
15"	lf	840	2.75	2.80
18"	lf	1,470	3.50	3.55
24"	lf	275	5.75	5.50
30"	lf	2,200	7.00	7.50
12" pipe culv, rem & relay	lf	345	1.70	1.65
24"	lf	110	3.50	4.50

Bids: 1-27-53 Items	Unit	Quantity	Unit Prices 1 C	2
Bit mix paving, waterways	sy	1,050	1.50	2.00
Hwy guard, type W2C, excl cost of posts	lf	20	2.40	2.10
Highway guard, type C3S	lf	1,000	1.65	1.60
Hwy guard, type C3C, excl cost of posts	lf	13,700	1.30	1.26
End anchor (C3C) excl cost of concrete castings	ea	80	38.50	36.50
Inter anchors (C3C) excl cost conc castings	ea	12	38.50	36.50
Stock fence	lf	3,850	0.44	0.42
Ind posts, excl cost posts	ea	245	4.50	4.25
Hwy guard rem & reset	lf	6,450	0.77	0.74
Anchors, rem & reset	ea	42	9.00	8.00
Ind posts, rem & reset	ea	24	4.50	4.25
Hwy guard, rem & stacked	lf	20	0.40	0.25
Hwy guard anchor, remove & stack	ea	7	2.75	3.00
Fences, remove & reset	lf	2,950	0.44	0.42
Special pipe rail fence	lf	78	8.00	19.00
Gran curb, type VB str	lf	5,830	2.85	2.85
curved	lf	30	3.60	4.50
type VA, str (6" x 12")	lf	500	3.60	4.15
Gran edging, type SB	lf	50	2.15	2.25
type SC (curves less than 10' radius)	lf	100	2.50	2.60
Granite curb inlets	ea	23	25.00	27.00
Gran curb corners, type A	ea	18	15.00	17.00
Curbing, rem & reset	lf	645	1.00	1.75
Gran edging rem & reset	lf	1,920	0.60	1.75
Curb inlet, rem & stacked	ea	1	10.00	20.00
Gran edging, rem & stacked	lf	80	0.35	1.00
Curb inlets, remove & reset	ea	7	15.00	20.00
Curb corners, rem & reset	ea	10	7.50	10.00
Type BF or CA traffic signal conduit	lf	720	0.80	1.10
Bounds removed & reset	ea	9	13.50	14.00
Moving portable office bldg	ls	1	500.00	500.00
Topsoil, excavated stacked, & rehandled	cy	86,500	0.65	1.10
Topsoil borrow	cy	11,160	1.00	1.65

Sewerage system, New Jersey

Seventeen thousand linear feet of 8-in. transite rubber ring sewer pipe, and 3,000 linear feet of 4-in. transite house laterals are being installed by Forest Contractors in Denville, N. J. The $158,820 contract awarded to the lowest of eight bidders by the town of Denville includes, besides installation of these sanitary sewers, construction of a pumping station, river crossing and 800 linear feet of cast iron pressure pipe. Lee T. Purcell, Paterson, N. J. is the engineer.

Wage rates prevailing in the vicinity of this nine-month job are: carpenters, $3.40 per hr; cement finishers, $3.65 per hr; and laborers, $2.56 per hr.

Bidders include:

1C	Forest Contractors, Flushing, N. Y.	$158,820
2	Berlanti Constr. Co, Inc, Bloomfield, N. J.	187,270
8	Cestone-Sammok Co., Montclair, N. J.	303,859

Bids: 12-3-52 Item	Unit	Quantity	Unit Prices 1 C	2
Exc & backfill, 0' to 8' deep	lf	13,000	$1.00	$1.50
8' to 12' deep	lf	4,000	2.00	1.70
deeper than 12'	lf	10	10.00	2.00
Rock excavation	cy	100	15.00	15.00
Timber sheeting	mft	20	100.00	70.00
Manholes	ea	70	300.00	400.00
F&L 8" cmt asb pipe	lf	17,000	2.70	3.25
Furn & lay exc backfill 8", cl 100, CIFM	lf	800	10.00	5.00
River crossing	ls	1	5,000	5,000
Replace conc pavement	sy	600	12.00	9.00
Replace 7" penetration pavement	sy	1,000	3.00	1.80
4", 45° or 90° house connec	ea	200	4.00	7.00
4" cement asbestos house connection pipe	lf	3,000	3.00	4.00
Screened gravel for fndn & drain	cy	100	5.00	10.00
Pump station bldg, comp	ls	1	21,820	34,700
Pumping equipment	ls	1	7,500	7,000
Pumping controls	ls	1	3,000	1,000
Flow meter, Kenn nozzle	ls	1	1,500	1,500

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USE THIS TRAILMOBILE CHECK LIST

- ☐ Water
- ☐ Gasoline
- ☐ Kerosene
- ☐ Asphalt
- ☐ Bulk Cement
- ☐ Aggregate
- ☐ L.P. Gas

Trailmobile can provide any of the following tank trailers—for water, gasoline, oil, butane and kerosene in specific sizes.

This 115-barrel bulk cement trailer can be emptied in 15 minutes with positive step-down screw discharge unloading—saves packaging and handling of bags.

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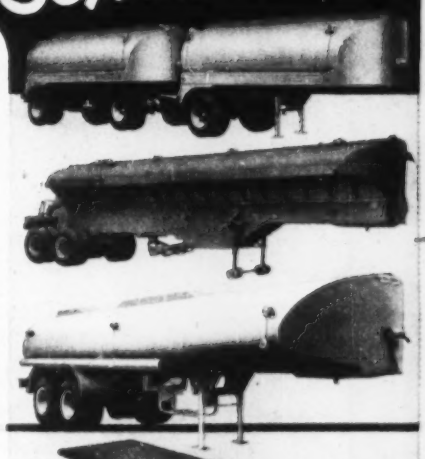

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- ☐ Bulk Machinery
- ☐ Concentrated Weights and Loads
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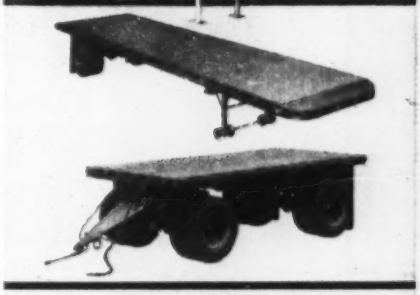

- ☐ Miscellaneous Equipment
- ☐ Loose Freight and Cargo
- ☐ Electrical Equipment
- ☐ Explosives and Delicate Instruments
- ☐ Tools
- ☐ Mobile Field Office

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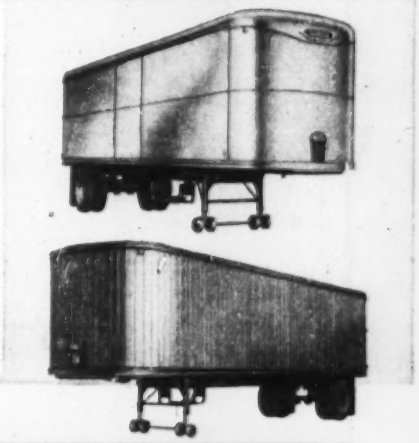

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

SOON LETS CONTRACT—BUILDINGS

▲ Mass., Needham—MANUFACTURING BLDG.—American Can Co., 31 Binford St., Boston, (selected list bidders) soon lets contract, paper container mfg. bldg., Rte. 128 near Worcester Turnpike, $1,000,000. A. O. Degling, gen. mgr., Engineering Dpt. CD 4/23.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **The Foundation Co.**, 50 William St., New York, N. Y. CA. est. $24,000,000. OFFICE Milk, Congress and Pearl Sts., BOSTON, MASS. Hub Building Co., 54 Devonshire St., Boston, Mass. Ralph Temple Jackson, 85 River St., Boston, Mass., archt.

▲ **The Foundation Co.**, 50 William St., New York, N. Y. CA. est. $5,000,000. OFFICE, BOSTON, MASS. Messenger Building Co., c/o Ralph Temple Jackson archt., 85 River St., Boston, Mass.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

▲ **N. Y., Bay Shore**—SCHOOLS—B.A. 6/23—Bd. Educ., Bay Shore, two elementary schools alterations, addns. $1,600,000. CD 1/31/47.

Pa., Galeton—SCHOOL—B.A. 6/25—Joint School Dist. of Galeton, 1 story 55x630 ft. brick, block grade and high school; $907,200. Plans deposit $20. Freeburg & Lindquist, 16 E. 4 St., Jamestown, archts. CD 4/11/52.

N. Y., Brooklyn—HOUSING—B.A. 7/15—New York City Housing Auth., 63 Park Row, New York, Zone 7, foundations and general constr.; heating and ventilating; electric; plumbing; furnish and install elevators for Brevoort Houses, Proj. No. NY-5-17, Sect. II, incl. Bldgs. Nos. 7 to 13 inclusive, in area bounded by Bainbridge St., Ralph Ave., Marion St. and Patchen Ave. Plans deposit $75. $25 elevators. Extended date. CD 6/8.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW JERSEY**—State Hy. Auth., State Office Bldg., 1035 Parkway Ave., Trenton,

Poirier & McLane Corp., 33 W. 42 St., New York, N. Y. LB $1,036,605, substructure, decking, incid. grading, paving for bridges at 5 crossings on Garden State Parkway, Contr. 64, Ocean and Monmouth Counties. Bids June 8. CD 5/22.

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

C. F. Malanka & Sons, Inc., 1317 Bergenline Ave., Union City, N. J., CA $806,288, paving 1.085 mi. Hackensack River Bridge approaches, U. S. Rtes. 1 and 9 (truck), Hudson Co. Bids May 19, awarded June 9. CD 5/26, under LB.

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,

Union Paving Co., 1227 N. Broad St., Phila., Pa., LB $549,962, divided hy. paving for 2.279 mi. Rte. 47 from Sixth St., Rio Grande to Grassy Sound Bridge approach, Cape May Co.;

Utility Constr. Co., 84 Paterson St., New Brunswick, N. J., LB $744,625, partial repaving and resurf. bridges on 18.2 mi. Sections 4F, 5G, 6D and 8J of U. S. Rtes. 1 and 9 from Cranbury Turnpike to Bayway traffic circle, Middlesex and Union Counties. Bids June 9. CD 5/20.

▲ **NEW JERSEY**—State Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Poirier & McLane Corp., 33 W. 42 St., New York, N. Y. CA $2,667,446, grading, drainage structures, paving, 1.3 mi. Garden State Parkway from Raritan River Bridge to existing Rte. 4, Contr. 17, Middlesex Co. Bids May 21, awarded June 3. CD 5/26, under LB.

▲ **NEW JERSEY**—State Hy. Auth., State Office Bldg., 1035 Parkway Ave., Trenton,

George M. Brewster & Sons, Inc. 275 W Fort Lee Rd., Bogota, N. J., CA $1,320,816, grading, drainage 7.9 mi. Garden State Parkway from Rte. 30 interchange to Mullica River interchange, Contr. 32, Atlantic Co. Bids May 18, awarded June 3. CD 5/26, under LB.

▲† **American Dredging Co.**, 12 S. 12 St., Phila., Pa. LB $2,970,850. Maintenance dredging in Fairmount Pool. Schuylkill River, Inv. No. CIVENG 36-109-53-39, PENNSYLVANIA. U. S. Eng., 121 N. Broad St., Phila 1, Pa. CD 1/20.

E. W. Graham, Cleveland, O. LB $566,962. Contr. 1243, cement conc.;

Mahoney Bros., 24 Knickerbocker Bldg., Baltimore, Md. LB $103,462. Contr. 1244, sheet asph. paving, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore, Md. Bids June 3. CD 5/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bellmore Greens Homes**, c/o Alwin Cassens, Jr., archt., 145 So. Franklin Ave., Valley Stream, N. Y. Owner Builds $2,000,000. 155 HOUSES, 40-acre tract, Bellmore Rd. north of Jerusalem Ave., BELLMORE, N. Y.

▲ **Gerace & Castagna, Inc.**, 155-10 Jamaica Ave., Jamaica, N. Y., CA $10,728,848; general constr.;

Jarcho Bros., Inc., 306 E. 45 St., New York 17, N. Y., CA $1,552,696, plumbing;

H. Sand & Co. Inc., 11 Park Pl., New York 7, N. Y. CA $1,422,120, heating for Coney Island New General HOSPITAL, Ocean Pkway, Avenue Z and E. 6 St., Grand total $13,703,664. BROOKLYN, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 6. CD 5/12 under LB.

▲ **Highcrest Homes**, c/o George Foster, archt., 5 Liberty St., Hempstead, N. Y. Owner Builds. $2,000,000. 200 HOUSES on tract at Crestwood Blvd. and Main St., FARMINGDALE, N. Y.

Kayfield Constr. Corp., 116-55 Queens Blvd., Fores Hills, N. Y., CA $885,929, general constr. (base bid) addns., alterations to Appellate Division COURT BLDG., Madison Ave. and E. 25 St., Manhattan Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 6. CD 5/12 under LB.

M. Melnick & Co. Inc., 225 Willow Ave., New York 54, N. Y., CA $928,700, Morrisania HEALTH CENTER, Fulton Ave. between E. 169 and E. 170 Sts., Bronx Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Apr. 22. CD 5/1 under LB.

Arden Knolls Homes, c/o Rudolph Novak, archt., 713 Main Ave., Clifton, N. J. Owner Builds. $900,000. 45 HOUSES on tract at Harrison Rd., near Ackerman Ave., GLEN ROCK, N. J.

▲ **Rolling Hills Homes**, c/o Rudolph Novak, archt., 713 Main Ave., Clifton, N. J., Owner Builds. $1,000,000. 76 HOUSES tract on Cranford Rd. near Thurston Terrace, GLEN ROCK, N. J.

▲ **L. H. Ludwig, Inc.**, 20 W. Main St., Falconer, Pa., CA, $1,357,000. Est. $1,866,717, 1 story steel frame, brick and block, Junior Senior HIGH SCHOOL, CORRY, PA. Corry Area Joint School Auth., Corry, Pa. Bids Mar. 10. CD 2/19.

Brookhaven Homes, 160 Long Lane, Upper Darby, Pa. Separate Contracts. $900,000. RESIDENTIAL development, South Ave., FOLSOM, PA.

▲ **Lone Lane Building Inc.**, 218 Long Lane, Upper Darby, Pa., Separate Contracts. $1,000,000. RESIDENTIAL development, Beatty Rd., MEDIA, PA. Karl F. Otto, Rosemont, Pa., archt.

▲ **John A. Johnson & Sons, Inc.**, 303 41st St., Brooklyn, N. Y., LB $1,793,000. Mill Creek HOUSING proj. PHILA., PA. Phila. Housing Auth., 42 S. 15 St., Phila., Pa. Bids June 4.

▲ **Dravo Corp.**, Neville Island, Pittsburgh 25, Pa., LB $1,123,600, development of river wall and wharf at Point State Park, PITTSBURGH, PA. State Dpt. Property & Supplies, 319 N. Front St., Harrisburg, Pa., Ralph E. Griswold & Assoc., 206 Gladstone Bldg., Pittsburgh, Pa., archts. Bids June 5.

▲ **Brookhaven Homes**, 160 Long Lane, Upper Darby, Pa. Separate Contracts, $1,391,000. RESIDENTIAL development, Sprout Rd. and Baltimore Ave., SPRINGFIELD, PA.

▲ **DeLuca Davis Constr. Co.**, 1968 Belair Rd., Baltimore, Md. CA $1,239,155. concrete, steel Monroe Street Viaduct, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore, Md. CD 6/2 under LB.

▲ **Chas. E. Brohawn**, Cambridge, Md. CA $1,175,620. est. $1,500,000. 4 story, brick, steel HOSPITAL addn., incl. kitchen, dining room, power plant, EASTON, MD. Easton Memorial Hospital, Easton, Md. CD 4/15 under LB.

SOUTH

BIDS ASKED—BUILDINGS

▲ **Miss., Jackson**—PLANT—B.A. 8/1—Century Mfg. Co., c/o John L. Turner & Assoc., archts., Medical Bldg., plant, $1,500,000. CD 6/2.

SOON LETS CONTRACT—BUILDINGS

▲ **Fla., Jacksonville** — HOSPITAL — Baptist Hospital Assoc. of Jacksonville, 1100 San Matce Blvd., soon lets contract, hospital, $2,000,000. CD 5/28 under LB.

▲ **Tenn., Memphis**—STORAGE—Memphis Packing Co., Div. Armour & Co., Union Stock Yards, Chicago 9, Ill. soon lets contract, cold storage bldg. and packing unit, $1,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **WEST VIRGINIA**—W. Va. Turnpike Comn., 1340 Wilson St., Charleston Zone 5,

Groves, Lundin & Cox, Wesley Temple Bldg., Minneapolis Minn., CA. $3,917,738, Contr. 26, grading, drainage, substructure 9.7 mi. Mahan, W. Va. to tunnel portal, incl. relocation 1.2 mi. W. Va., 15 and 0.5 mi. W. Va. 83, Kanawha Co. Bids June 2, awarded June 5. CD 6/4, under LB.

▲† **Farnsworth & Chambers Co.**, P.O. Box 332, New Orleans, La., LB. $3,045,000, maintenance hangars, Spec. 36616, PENSACOLA, FLA. Officer-in-Charge of Constr., U. S. Naval Air Station, Pensacola, Fla. Bids June 2.

▲† **Consolidated Contractors**, P.O. Box 237, Memphis, Tenn., LB. $1,048,562, utility plants and distr. sys., Spec. 36732; LB. $578,753, operations bldg., Spec. 30186. operations bldg., Forrest Sherman Field, PENSACOLA, FLA. Officer in Charge of Constr., U. S. Naval Air Station, Pensacola, Fla.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Belvedere Park**, c/o Adair Realty & Loan Co., Healey Bldg., Atlanta, Ga. Owner Builds. $4,000,000. 487 RESIDENCES, ATLANTA, GA.

▲ **Mion Constr. Co.**, 327 Techwood Dr., N.W. Atlanta, Ga., LB. $1,679,235, classroom-admin. bldg., at Atlanta div. of University of Georgia, ATLANTA, GA. Bd. Regents, university system of Georgia, 20 Ivy St., S.E., Atlanta, Ga. Bids June 10. CD 4/15.

▲ **Tennessee and Alabama**—Tennessee Valley Auth., New Sprankle Bldg., Knoxville, Tenn. awarded contracts for Gallatin Steam Plant, Tenn., Kingston Steam Plant, Tenn. and Colbert Steam Plant, Ala. Grand total. $2,446,455.

Gallatin Steam Plant, Tenn.

TAG Equipment Co., 223 E. 10 St., Chattanooga, Tenn. CA. $152,724, two 60-ton crawler cranes with attachments.

Westinghouse Electric Corp., Essington, Pa., CA. $66,000, reheat stop valves;

Wolverine Tube Div., Calumet and Hecla Consolidated Copper Co., Decatur, Ala., CA. $239,903, condenser tubing.

Ingersoll-Rand Co., Phillipsburg, N. J., CA. $888,477, boiler feed pumps.

Kingston Steam Plant, Tenn.

Republic Flow Meters Co., 2240 W. Diversey St., Chicago, Ill., CA. $483,576, control boards and metering equip.

S.B.S. Electric Supply Co., New Kensington, Pa., CA. $75,939, steel conduit.

Connery Constr. Co., 28 and Luzerne Sts., Phila., Pa. CA. $365,000, air and gas ducts.

Colbert Steam Plant, Ala.

R. F. Knox Co. Inc., Ambridge, Pa., CA. $174,836, furnishing and installing steel roof decking.

MIDDLE WEST

▲ **Mich., Kalamazoo** — B.A. 7/8 — City, Clarence H. Elliot, city mgr., Contr. 1, sewage disposal plant with treatment facilities, $2,000,000. Plans deposit $10, refundable. Jones, Henry & Schoonmaker, Security Bldg., Toledo, O., engrs. CD 4/15.

BIDS ASKED—BUILDINGS

▲ **Ill., Des Plaines**—SCHOOLS—B.A. 7/2—School Dist. 62, Thacker Rd., Des Plaines, 2 story bsmt., 120x310 ft. Algonquin Junior High School and elementary school. $1,100,000. Childs & Smith, 20 N. Wacker Dr., Chicago Zone 6, archts. CD 2/20/52.

BUILDINGS

LOW BIDS AND CONTRACTS

Heslop Munore Falls, Inc., 533 W. Market St., Akron, O., Owner Builds, $918,100, 153 HOUSES in Heslop Morningview Subdivision No. 5 on East Side, CUYAHOGA FALLS, O.

▲ **W. A. Simms**, 24 N. Jefferson St., Dayton, O. Owner Builds. $1,625,000, 125 HOMES in Eastview development between Meyers Ave. and Lynhaven Dr. near Airway Rd. DAYTON, O.

Carl E. Erickson Co., 4657 Ravenswood Ave., Chicago 40, Ill., CA. $650,000. 75,000 sq. ft. FACTORY, Narragansett Ave. and C.M. St. P. & P. R. R. CHICAGO, ILL. Replogle Globes, Inc., 325 N. Hoyne St., Chicago, Ill. Bids Mar. 4, awarded May 29. CD 3/2.

▲ **Blackhawk Builders**, Box 42, Elgin, Ill. Owner Builds. $7,200,000. 600 HOMES in area of Shoe Factory Rd. ELGIN, ILL.

▲ **J. E. Merrion & Co.**, 2015 E. 79 St., Chicago, Ill. Owner Builds. $1,500,000. 188 APARTMENT bldg. with 892 units, shopping center, sewers, paving, EVERGREEN PARK, ILL. Emil J. Minx, 908 Pontiac Rd., Milmeste, Ill., archt. Awarded June 1.

Clearing Industrial District Inc., 38 S. Dearborn St., Chicago 3, Ill., CA, $780,000. FACTORY, FRANKLIN PARK, ILL. Northern Metal Mfg. Co., Franklin Park, Ill. John C. Cromelin, 6455 S. Central St., Chicago, Zone 38, archt. Awarded May 26.

Nelson & Co. Inc., 1550 Yont St., Racine, Wis., CA. $500,000, 1 story, 54,000 sq. ft. brick, steel structure for new distribution and WAREHOUSE CENTER. SPRINGFIELD, ILL. Massey-Harris Co., 1721 Packard Ave., Racine, Wis. Hanker & Heyer, 1033 Commerce Title Bldg., Memphis, Tenn., archts. CD 2/18/52.

▲ **Clearing Industrial District, Inc.**, 38 S. Dearborn St., Chicago 3, Ill., CA. $1,200,000. WAREHOUSE, North Ave. and Cornell St., MELROSE PARK, ILL. Sylvania Electric Products Co., 1744 Broadway, New York 19, N. Y. John C. Cromelin, 6455 S. Central Ave., Chicago 38, Ill., archt. Awarded May 20.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲ **Minn., Richfield (Minneapolis P. O.)**—SCHOOL—B.A. 7/16—Bd. Educ., E. C. Ellenson, clk., high school 70 St. and Harriet Ave., $2,250,000. Thorshov & Cerny, 400 Metropolitan Bldg., Minneapolis, archts. CD 5/27.

▲ **Okla., Duncan**—COKING UNIT—Bids Asked—Sunray Oil Co., 1st Natl. Bldg., Tulsa, coking unit in connection with owners existing refininery catalytic cracking unit. $1,475,000. CD 5/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **J. D. Armstrong Co. Inc.**, 1606 Grand St., Ames, Ia., CA. **$1,152,881**, est. $1,286,162, Schedules 2, 3, and 4, earthwork and structures for Franklin Canal, Bostwick Div., Missouri River Basin Proj. Spec. DC-3981. NEBRASKA Bureau Reclamation, Dpt. Interior, Superior, Nev. Bids Mar. 26, awarded May 29. CD 4/2 under LB.

† **Capitol Steel & Iron Co.**, 1726 S. Agnew St., Oklahoma City, Okla., CA. **$824,096**, prefabricated multipurpose hangars, Lincoln Air Force Base and Rapid City Air Force Base, Inv. 25-066-53-182. LINCOLN, NEB. and RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids June 2. CD 6/9 under LB.

▲ **Sisco Electric Co.**, Conroe, Tex., CA **$1,228,106.** 183 mi. rural distr. lines, Albuquerque to Algodones, NEW MEXICO. Plains Electric Generation & Transmission Co-operative, Albuquerque, N. M. Bids Apr. 21. CD. 5/12.

† **H. W. Pride Constr. Co.**, 611 W. 41 St., Denver, Colo. LB **$789,210.** rehabilitation 80 barracks, 2 mess halls, Lowry Air Force Base, Eng. 25-066-53-154, DENVER, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids June 4. CD 5/11.

BUILDINGS

LOW BIDS AND CONTRACTS

Frank Quinlan Constr. Co., 407 Liberty St., Kansas City, Mo. CA **$798,860.** WAREHOUSE, shed, transformer, repair and storage, KANSAS CITY, KAN. Bd. P. Utilities, City Hall, Kansas City, Kan. Bid May 27. CD 5/6.

Herman Carty, Riegler Bldg., Little Rock, Ark. CA est. **$750,000.** rebuild masonic TEMPLE, LITTLE ROCK, ARK. Albert Pike Memorial Masonic Temple, Eighth & Scott Sts., Little Rock, Ark.

▲ **Strauss Bros.**, 3815 Touzalin Ave., Lincoln, Neb. Owner Builds. **$3,000,000.** 111 FOURPLEXES, LINCOLN, NEB. J. O. & G. R. Unthank, 527 Sharp Bldg., Lincoln, Neb., archts.

Robert E. McKee, General Contractor, 2708 Inwood St., Dallas, Tex., LB **$839,500.** est. $550,000. 3 story 143x230 ft. masonry Memorial HOSPITAL STAFF BLDG., 3 elec. passenger elevators, 1 freight elevator, DALLAS, TEX. Dallas Co., Court House, Dallas, Tex. Bids June 4. CD 5/18.

Pure Oil Co., Nederland, Tex., Own Forces, **$575,000.** reconstr. portion of burned out REFINERY CRACKING UNIT, NEDERLAND, TEX. CD 12/8.

G. W. Mitchell, 811 American Hospital & Life Bldg., San Antonio, Tex., CA **$665,167**, OFFICE-warehouse, SAN ANTONIO, TEX. Straus-Frank Co., 301 S. Flores St., San Antonio, Tex. Bids May 26. CD 6/4 under LB.

† **Campbell & Kay**, Box 4091, Station A, Albuquerque, N. M., CA **$558,329.** BUILDING No. 287, Inv. No. 293-53-23, ALBUQUERQUE, N. M., U. S. Atomic Energy Comm., Box 5900, Albuquerque, N. M. Bids May 28. CD 6/5 under IB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Wash., Seattle**—B.A. 6/17—City, County-City Bldg., test borings for west approach of $3,000,000 bridge over Duwamish River on 1 Ave. S. W. E. Parker, city engr. CD 2/2/51.

BIDS ASKED—BUILDINGS

Calif., Atherton — DORMITORY — B.A. 6/24 — Menlo School and Menlo College, 2 dormitory bldgs., single family residence, $450,000 Plans deposit $25. Kingsford Jones, 611 Menlo Ave., Menlo Park, archt.

▲ **Wash., Seattle**—STORE ADDN.—B.A. 6/25—Allied Department Stores, 401 Fifth Ave., New York, N. Y. 4 story 231x350 ft. rein.-con. department store addn., atop present structure, $3,500,000. John Graham & Co., Dexter Horton Bldg., Zone 4, archts. Bids Mar. 5 rejected. CD 2/11.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Baldwin-Lima-Hamilton Corp.**, 940 Simpson St., Eddystone, Pa., CA **$853,250**, four 186-in. butterfly valves for Palisades Power Plant, Palisades Proj. Spec. DS-3911. IDAHO. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids Apr. 30, awarded May 29. CD 5/7 under LB.

▲† **Campbell Constr. & Equipment**, 1150 Folson St., San Francisco, Calif., LB **$1,260,000** four-wing hangars and apron pavement, Eng 45-164-53-40. MOUNTAIN HOME, IDAHO. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids June 3. CD 5/19.

ARIZONA—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix,

San Xavier Sand & Rock Co., Box 1031, Tucson, Ariz. CA **$578,191.** Tucson controlled access hy. 1.1 mi. grading, drainage, select material, aggregate base, c. conc. bit. plant mix, Pima Co. Bids Apr. 23, awarded June 4. CD 5/6, under LB.

† **OREGON**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland,

Cosmo Gilo, Lowell, Ore., CA **$760,872.** grading 12.355 mi., Smith River Rd., Douglas Co. Bids May 7, awarded June 5. CD 5/13 under LB.

† **Midland Constructors, Inc.**, 3332 E. Florence St., Huntington Park, Calif., CA **$464,637**, Schedules 1 and 2, McNary-Maupin 300 kv line No. 1;

Western Line Constr. Co., Builders Exchange Bldg., Portland, Ore., CA **$398,628.** Schedules 3 and 4, McNary-Maupin 300-kv line No. 1, Inv. 6991, Umatilla, Morrow, Gilliam, Sherman and Waco Counties. OREGON. Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore. Bids May 14, awarded June 3. CD 5/19.

† **CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, 1101 Flood Bldg., San Francisco,

Ball & Simpson, 685 Delaware St., Berkeley, Calif. CA **$856,972.** grading, surf. 4.23 mi. Sonora Pass, Stanislaus National Forest, Proj. Calif. FH 38-1, Tuolumne Co. Bids May 26, awarded June 2. CD 6/3 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Henry George & Sons**, Hutton Bldg., Spokane, Wash., CA, general contr. for 23 rein.-con. bins, 123 ft. high and 40x54 ft. head house 235 ft. high for GRAIN ELEVATOR addn.;

General Constr. Co., 4850 N. W. Front Ave., Portland 8, Ore., CA clearing and pile driving for grain elevator addn. Total cost. **$1,800,000.** VANCOUVER, WASH. Spokane, Portland & Seattle Ry. Co., C. F. Thomas, Ch. Engr., 1101 N. W. Hoyt St., Portland 7, Ore. CD 2/4.

The Pacific Co., 158 Santa Clara Ave., Oakland, Calif. LB **$972,600.** junior-senior high SCHOOL, PARADISE, CALIF. Paradise Unified School Dist., Paradise, Calif. Bids May 27. CD 5/13.

Sober Constr. Co., 5844½ E. Beverly St., Los Angeles, Calif. CA **$590,000.** 100 stucco DWELLINGS on Garrick, Calada and Eluora Sts., PICO, CALIF., Keith Garrick, 5844½ E. Beverly St., Los Angeles, Calif.

Haas & Haynie, 275 Pine St., San Francisco, Calif. CA **$500,000.** PLANT addn., SAN JOSE, CALIF. Mayfair Packing Corp., 1582 S. First St., San Jose, Calif. Awarded June 1.

State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. rejected bids, completion of receiving and treatment unit at Stockton State Hospital, STOCKTON, Calif. LB **$859,950.** CD 6/2, under LB.

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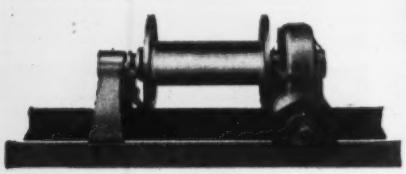

This Model 10 Tulsa Winch is used by a commercial chemical fertilizer manufacturer to spot freight cars for loading and unloading. It is powered by an electric motor and does not use lever controls.

Tulsa* Winch
TULSA, OKLAHOMA DIVISION OF VICKERS Inc

*Reg. U. S. Pat. Off.

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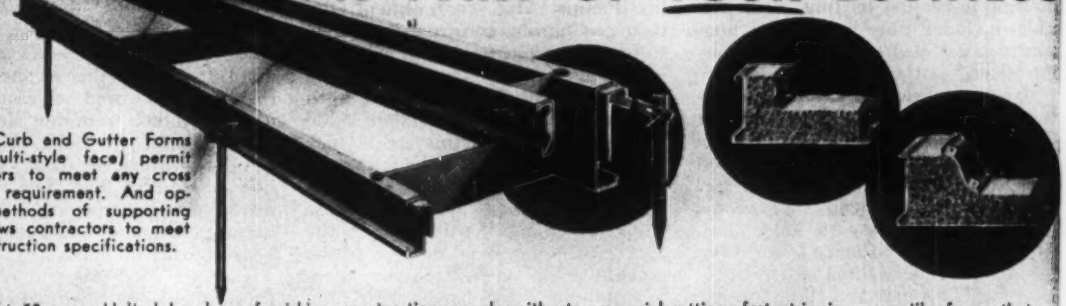
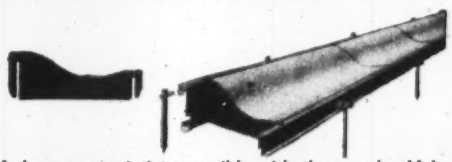


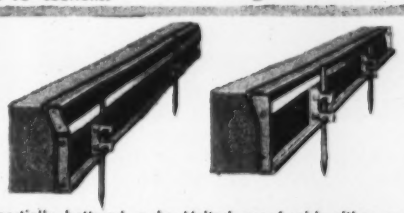
Heltzel Curb and Gutter Forms (with multi-style face) permit contractors to meet any cross sectional requirement. And optional methods of supporting face allows contractors to meet any construction specifications.

For almost 50 years Heltzel has been furnishing construction people with strong, quick-setting, fast stripping, versatile forms that make concrete forming easier, faster and less expensive.
On this page is a sampling from the world's most complete line of modern steel forms . . . designed and built by the nation's leading manufacturer of forms for concrete construction.



Two of the many variations possible with the popular **Helco Basic Forms.** These forms are designed to permit contractors to work an almost endless variety of curbing styles from the same basic set. All **Helco Basic Forms** are made of long lasting tough carbon manganese steel in 10' sections.

For curb work 12" to 24" in height, Heltzel has designed a **heavy duty dowel joint form** that has found ready acceptance in the field.



For partially battered curbs Heltzel can furnish either one or two piece front forms depending on your job requirements.

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CONTRACTORS AND MUNICIPAL ENGINEERS: Today's high labor costs make the use of steel forms almost a necessity. You'll find that Heltzel can provide by far the widest variety of either standard or special forms.

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Move to ease FHA terms out as Congress speeds housing

Softening of FHA mortgage requirements to make home financing and home buying easier will have to wait till next year. House and Senate leaders—aiming for enactment of housing legislation by June 30 if possible—included only urgent and noncontroversial items in the bills they introduced last week.

After much pulling and hauling between Housing Administrator Albert Cole, on one hand, and Federal Reserve Board and Treasury officials on the other, the Administration had decided to recommend that people who finance houses with FHA mortgages be allowed to make lower down payments. Cole wanted easier terms; but the Treasury and FRB people felt this would conflict with their anti-inflationary policy. When it became apparent that easier down payments would run into trouble on Capitol Hill, in Congress, congressional leaders quickly dropped this provision.

Here is what the proposed housing legislation calls for. It extends for one year: (1) The Wherry military housing program, (2) the authority of the Federal National Mortgage Assn. (Fannie Mae) to make prior commitments for purchase of mortgages on programmed defense housing, and (3) authority to provide government-owned temporary housing in the Atomic Energy Commission areas. These programs are due to expire June 30.

More important to builders and home buyers generally, the bill will increase FHA mortgage insurance authority by $1.5 billion. The present authorization is about used up; FHA's outstanding insurance has increased more than $2 billion in the last year.

• **One-for-one**—Another helpful provision of the bill recognizes and approves Fannie Mae's one-for-one mortgage sale and purchase agreement. By this arrangement, a builder can utilize Fannie Mae for houses he wants to start. He buys $100,000, say, of mortgages from Fannie Mae. With them he gets a Fannie Mae commitment to buy from him not more than the same amount of mortgages—good for one year.

The builder wants only the commitment—not the mortgages he has acquired from Fannie Mae. So he sells the mortgages, taking a slight loss if he unloads them at a discount in order to make a quick sale. With his Fannie Mae commitment, he then can borrow construction money to build the houses.

Fannie Mae will be authorized to make such purchase contracts until July 1, 1954, up to a total of $200 million, on such terms as it may prescribe. Actually, Congress expects Fannie Mae to make a net sales gain on its one-for-one deals. Purchase contracts probably will commit the agency to buy only 90 or 95% of the amount sold. A builder who needs a commitment will have to buy from Fannie Mae a larger amount than he will later sell to the agency.

Allowed to expire June 30 are the programming of any additional defense housing and the acceptance of any loan-and-grant applications for community facilities.

To bring other government mortgage rates into line with recent VA and FHA increases, the new legislation raises the interest rates from 4% to 4½% on direct VA loans to veterans, on military housing and on cooperative housing.

In the mortgage market, there was still no sign that the rate boost on VA mortgages was attracting any heavy buying by life insurance companies and banks. But a survey of savings and loan associations made by the U.S. Savings & Loan League indicated that S&Ls plan to buy about $100 million of VA mortgages monthly during the second half of this year, compared with an average of $58 million monthly during the similar period in 1952, when total VA loans averaged about $217 million a month. The S&Ls are primarily mortgage investors, while insurance companies and banks also are heavy buyers of bonds.

Proposed work drops off

Dollar volume of proposed new projects fell off noticeably in May, according to reports made to Engineering News-Record and the Construction Daily. The $800-million total is the smallest for May since 1950. It was down 36% from April of this year, which itself was down about 25% from March volume.

The drop in proposed work is most marked in private construction, due mainly to a decline in new industrial and private unclassified projects. Mass housing and commercial building are still being proposed at a fairly steady, high rate.

In the public work field, proposed work fell off less in May—both on a percentage and a dollar basis—than in private construction. Sewerage, waterworks, and bridges show a steady volume. Earthwork and waterway projects picked up. But in the important category of public buildings, proposed work continued to drop, as it has steadily every month this year. Highways, another major category, eased lower. Public unclassified work dropped sharply.

Office space demand eases realtors find at session

Though office and loft occupancy in cities around the U.S. still remains well above 95% of available space, demand is easing. As an ENR survey showed earlier this year (ENR Mar. 19, p. 24), owners of older buildings are beginning to worry lest new construction may hurt them.

That's the picture you get from last week's convention in Pittsburgh of the National Association of Building Owners and Managers. The tip-off: Reports that tenants are getting tougher about accepting rent increases, and that owners and managers of older buildings are starting to have trouble keeping their space filled.

Building management people who attended the convention emphasized that their operating costs are rising faster than they can boost rents, with the result that earnings on investment are declining. Rents on older buildings have been pushed closer to the premium rents commanded by new, expensive buildings, and can't go much higher.

• **More coming**—According to estimates by the association, a lot of new office buildings are in the works. They figure that new construction worth about $1 billion will be added to existing office space within the next two years. That's a heavier investment than the $600 million spent on putting up about 100 elevator-type office buildings since World War II.

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But that's not all Dowflake will do for your summer concrete. It will make it easier to work. Dowflake gives concrete a high degree of plasticity that makes it flow more easily and fill forms more completely. This means lower labor costs and greater worker efficiency. Dowflake also provides uniform curing, for it reduces the moisture loss during the early hydration period and accelerates the hydration action while moisture is present.

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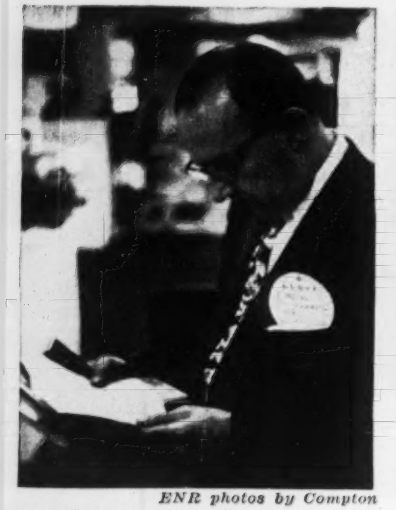


ENR photos by Compton

WHAT TO SEE? ponders J. H. Bliss, head of construction for J. C. Penney Co. stores.

ATTRACTED by a luminous ceiling, Bliss wonders how contractors would bid on it.

MODEL OF A MOTOR STAIR gets attention from Bliss, whose department will spend about $25 million on store construction and improvements—75% for new buildings.

Retailers plan $5-billion program

Dropping of government controls on commercial construction sparks a high-rate of store modernization

A record amount of $5 billion will be spent by America's retailers to modernize, expand and build new stores during 1953 and 1954, according to a recent survey, which was conducted by the Store Modernization Institute (directed by John W. H. Evans). Last week the institute ran a four-day show of modern-store construction materials at Madison Square Garden in New York City.

Principal retail modernization programs, now under way or projected, the survey found, call for construction of new branch stores, extension of self-service departments, new shelving and fixtures, better warehousing, greater mechanization of materials handling.

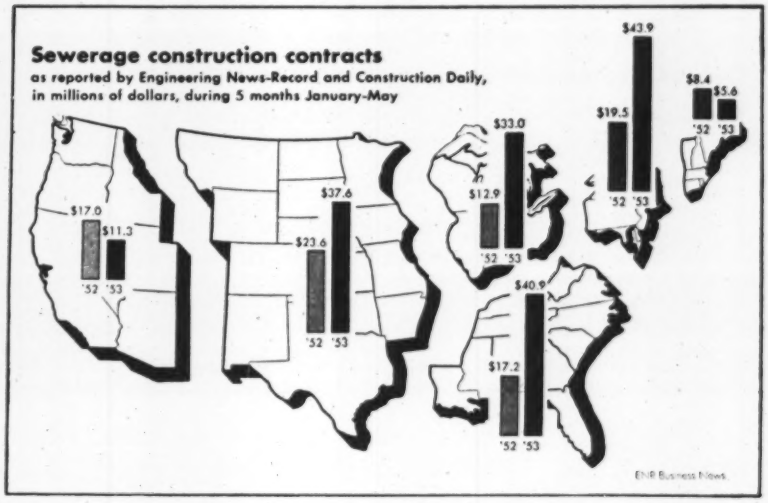
The biggest (and most interesting to contractors) item in the $5 billion was the estimated 250 new shopping centers under way or soon to be built. The shopping center program totaled about $3 billion. Chain stores of all kinds also had plans for new stores. In addition, existing downtown retail centers were planning modernization and expansion of their facilities.

The pictures on the rest of the page show how Joseph H. Bliss, of the real estate and construction departments of the J. C. Penney Co., Inc. toured the Garden show. The results will be apparent to the local contractors and architects employed by Penney in the forty-eight states.

DEMONSTRATION of a truck-loading-platform leveler calls for Bliss' attention to its working parts.

SIGHT AND TOUCH tells Civil Engineer Bliss something about enameled steel facing.

LAST LOOK, loaded with literature from many exhibits, and back to the office with many new ideas.



Sewerage contracts run at record pace as communities face waste problems

Expanding U. S. communities, faced with the problem of disposal of industrial wastes and sewage from new residential developments, and pressed by public health agencies are planning new sewerage construction on a record-breaking scale. In the first 24 weeks of 1953, contract awards reported to ENGINEERING NEWS-RECORD and the Construction Daily total $180 million, a thumping 63% increase over the similar 1952 period and 18% more than that found in the same 24 weeks of 1951, which was the previous record year.

Sewerage work is up sharply in all parts of the U.S., except New England and the Far West (map). A regional breakdown is available for the first five months of this year, two weeks behind the 24-week total. Increases range from 156% in the Midwest to 59% in the states between the Mississippi River and the Rocky Mountains.

• **Regions**—Where dollar volume of new sewerage construction in the first five months is concerned, the Middle Atlantic region is in the lead with total awards of $43.9 million. This area ranked third in 1952 and fourth in 1951, after having led the U.S. for 1949 and 1950.

The South is a close second with $40.9 million. It had ranked fifth last year, and third in 1951.

The states west of the Mississippi (and east of the Rockies) have dropped to third place, with a total of $37.6 million. This region held the top rank last year, and rated second in 1951 and 1950.

Though the five-month volume of sewerage awards in the Midwest is far ahead of the similar period last year, it's off sharply from the high level of the second half of 1952. So far this week, this area ranks fourth, compared with second in 1952 and top position in 1951. (For Ohio pollution dispute, see page 46.)

New England, which steadily increased its volume of work in the 1947-1952 period, is running 33% behind its peak year of 1952.

In the Far West, sewerage volume has been on the downgrade since the 1948 peak. But the drop this year is the sharpest yet, largely due to California.

• **Backlog**—However, an analysis of the backlog of proposed jobs shows that California soon might stage a comeback. Last fall, voters of Los Angeles County voted $179 million for storm drainage. Among jobs proposed this year are a $50-million project for rebuilding Kansas City (Kan.) entire sewerage system, and $20.6 million in additional work planned by the Chicago Sanitary District.

Of 521 projects proposed so far this year or which moved from backlog to contract status, most (63%) are under $250,000. About one-third are under $100,000 total proposed work, at $233.5 million, is 48% ahead of the first five months of 1952—which suggests the present record-breaking pace will continue awhile.

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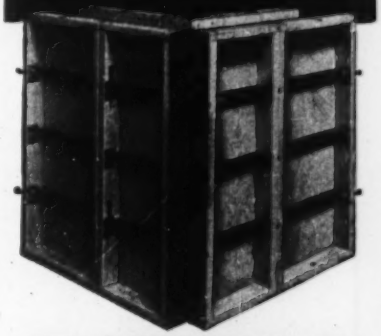

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Construction machinery price index (1947-49 = 100)

Bureau of Labor Statistics wholesale price index

	May '53	April '53	May '52	% change from April '53	% change from May '52
Construction machy. & equipt.	**129.0**	128.6	124.9	+0.3	+3.3
Power cranes, etc.	**127.5**	126.9	123.9	+0.5	+2.9
Scrapers and graders	**128.1**	128.0	129.1	+0.1	−0.8
Tractors, non-farm	**135.7**	135.2	128.0	+0.4	+6.0
Machinery, tractor mounted	**132.3**	131.8	130.9	+0.4	+1.1
Mixers, pavers, etc.	**121.7**	121.3	118.1	+0.3	+3.0
Specialized constr. machy.	**123.1**	123.1	119.1	0	+3.4
Portable air compressors	**124.8**	124.8	124.8	0	0
Air tools, hand held	**122.7**	120.5	120.5	+1.8	+1.8

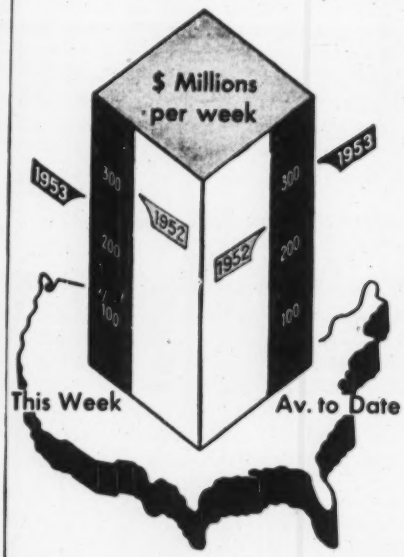
Price rise tapers off in construction machinery

The wholesale price index for construction machinery has gained 2.1% during the first five months of this year, but only 0.3% in May, says the Bureau of Labor Statistics (table). Compared with a year ago, the index has gone up a total of 3.3%.

Among equipment categories, power cranes gained most (0.5%). The price index of hand-held air tools moved up 1.8% in May, for the first gain since January, 1951. However, the price index for portable air compressors is exactly the same figure as it was a year ago.

Activity This Week

As reported to ENR (in millions of dollars)



Amount of contracts let

	This Week	Cumulative 25 wks 1953	Cumulative 25 wks 1952	% chge
Federal	$33.7	$753.7	$1,017.2	−26
State and Municipal	112.3	2,419.3	2,024.2	+20
Total pub.	146.0	3,173.0	3,041.4	+4
Total priv.	103.7	4,314.3	3,376.2	+28
U. S. Total	**$249.7**	**$7,487.3**	**$6,417.6**	**+17**

Contracts by type of work

Waterworks	$4.3	$120.0	$114.4	+5
Sewerage	9.3	189.2	122.0	+55
Bridges	12.3	349.3	179.5	+95
Highways	45.7	810.0	684.3	+18
Earthwork, Waterways	4.6	180.3	270.0	−33
Buildings: Public, excl. hsg.	46.1	856.9	900.3	−5
Housg., pub.	4.7	262.2	427.8	−39
Housg., priv.	63.7	1,960.7	1,402.4	+40
Commercial	17.2	530.9	300.2	+77
Industrial	17.3	1,427.0	1,407.0	+1
Unclassified	24.5	800.8	609.7	+31
Total	**$249.7**	**$7,487.3**	**$6,417.6**	**+17**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Years = 100 1913	1926	1949
Construction cost	Jun 1953	593.35	285.22	124.39
	May 1953	589.21	283.23	123.52
Building cost	Jun 1953	426.65	230.63	121.28
	May 1953	426.47	230.54	121.23
Volume	May 1953	499	203	144

OFFICIAL PROPOSALS

- **RATE:** The rate for Official Proposal advertising is $1.50 per line (or fraction) set solid; and where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

- **CLOSING DATE:** Friday 10:30 A.M. for issue dated the following Thursday.
- **SEND COPY TO:** Official Proposal Div.
  Engineering News Record
  330 W. 42nd Street
  New York 36, N. Y.

Bids: July 8, 1953

Contract C-4
Contract C-5
Contract C-6
Contract C-7
Contract C-4 & 5
Contract C-5 & 6
Contract C-6 & 7
Contract C-4, 5 & 6
Contract C-5, 6 & 7
Contract C-4, 5, 6 & 7

NOTICE TO BIDDERS

Sealed proposals will be received by the Ohio Turnpike Commission for the performance of each of the Contracts enumerated above.

The work covered by Contract C-4 consists generally of the construction of grading, drainage, structures, and paving of approximately 3.7 miles in Construction Section 4 of Ohio Turnpike Project No. 1, beginning at a point about 2,000 feet west of Turner Road at Turnpike Centerline Station 296+00 in Mahoning County, and extending eastwardly to a point about 4,500 feet east of State Route No. 46 at Turnpike Centerline Station 491+61 in Mahoning County, and the construction of an engineer's office building and facilities on or near the site of the work.

The work covered by Contract C-5 consists generally of the construction of grading, drainage, structures, and paving of approximately 5.3 miles in Construction Section 5 of Ohio Turnpike Project No. 1, beginning at a point about 1,480 feet west of the intersection of Gladstone Road and State Route No. 45 at Turnpike Centerline Station 14+00 in Mahoning County, and extending eastwardly to a point about 2,000 feet west of Turner Road at Turnpike Centerline Station 296+00 in Mahoning County, and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-6 consists generally of the construction of grading, drainage, structures, and paving of approximately 2.9 miles in Construction Section 6 of Ohio Turnpike Project No. 1, beginning at a point about 1,140 feet west of Lintz-Town Line Road at Turnpike Centerline Station 424+30 in Trumbull County and extending eastwardly to a point about 1,480 feet west of the intersection of Gladstone Road and State Route No. 45 at Turnpike Centerline Station 14+00 in Mahoning County.

The work covered by Contract C-7 consists generally of the construction of grading, drainage, structures, and paving of approximately 3.9 miles in Construction Section 7 of Ohio Turnpike Project No. 1, beginning at a point about 110 feet east of the Ravenna-Warren Road at Turnpike Centerline Station 215+00 in Trumbull County, and extending eastwardly to a point about 1,140 feet west of Lintz-Townline Road at Turnpike Centerline Station 424+30 in Trumbull County, and the construction of an engineer's office building and facilities on or near the site of the work.

The work covered by Contracts C-4 & 5; C-5 & 6; C-6 & 7; C-4, 5 & 6; C-5, 6 & 7; and C-4, 5, 6 & 7, which consist of various combinations of Construction Sections 4, 5, 6 and 7, is the construction as above generally described for the individual Construction Sections in each combination contract.

In Construction Section 4, the principal structures to be built are six reinforced concrete box culverts, one reinforced concrete retaining wall, and six steel beam bridges of from three to five spans each, supported on reinforced concrete abutments and bents. The abutments of all of these bridges are to be on cast-in-place reinforced concrete piles. All of the bents are to be on spread footings.

In Construction Section 5, the principal structures to be built are seven reinforced concrete box culverts, and two steel beam bridges of from three to six spans each, supported on reinforced concrete abutments and bents. The abutments of all of these bridges are to be on cast-in-place reinforced concrete piles. The bents of seven bridges are to be on spread footings. The bents of the Meander Reservoir Bridge are to be on cast-in-place reinforced concrete piles.

In Construction Section 6, the principal structures to be built are five reinforced concrete box culverts, and two steel beam bridges of four and five spans each, supported on reinforced concrete abutments and bents. The abutments of the two bridges are to be on cast-in-place reinforced concrete piles. The bents of the two bridges are to be on spread footings.

In Construction Section 7, the principal structures to be built are three reinforced concrete box culverts, and six steel beam bridges of from one to five spans each, supported on reinforced concrete abutments and bents. The abutments of all of these bridges are to be on cast-in-place reinforced concrete piles. The bents of two bridges are to be on cast-in-place reinforced concrete piles and the bents of three bridges are to be on spread footings.

Approximate quantities of the major items of construction for Contract C-4 are as follows:

Roadway Excavation	691,000 cubic yards
Borrow	387,000 cubic yards
Structural Concrete	13,360 cubic yards
Reinforcing Steel	1,948,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,307,000 pounds
Concrete Bearing Piles	9,100 lineal feet
10" Reinforced Concrete Pavement	102,000 square yards

Approximate quantities of the major items of construction for Contract C-5 are as follows:

Roadway Excavation	1,340,000 cubic yards
Structural Concrete	15,000 cubic yards
Reinforcing Steel	2,046,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,906,000 pounds
Concrete Bearing Piles	26,150 lineal feet
10" Reinforced Concrete Pavement	175,000 square yards

Approximate quantities of the major items of construction for Contract C-6 are as follows:

Roadway Excavation	69,000 cubic yards
Borrow	376,000 cubic yards
Structural Concrete	2,700 cubic yards
Reinforcing Steel	400,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	400,000 pounds
Concrete Bearing Piles	1,380 lineal feet
10" Reinforced Concrete Pavement	82,000 square yards

Approximate quantities of the major items of construction for Contract C-7 are as follows:

Roadway Excavation	31,000 cubic yards
Borrow	1,900,000 cubic yards
Structural Concrete	13,500 cubic yards
Reinforcing Steel	1,800,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	2,430,000 pounds
Concrete Bearing Piles	16,000 lineal feet
10" Reinforced Concrete Pavement	110,000 square yards

For each contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

This is a readvertisement of the work to be done on each of Construction Sections 4, 5, 6 and 7. Proposal forms, Plans, Cross Sections and Special Provisions for each of Contracts C-4, C-5, C-6 and C-7 as formerly advertised are now obsolete. Each person who bid pursuant to the former advertisement and desires to bid again for these Construction Sections, or any of them, must obtain a new set of Contract Documents for the letting advertised in this notice, except that he need not obtain a new set of General Specifications or of those Supplemental Specifications already in his possession and applicable to any or all of these contracts, as indicated in the Special Provision comprising a part of the new Contract Documents.

Copies of the Plans and General Specifications for said Contracts will be available on and after June 10, 1953 for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; of the Affidavit which must accompany any such Proposal; of this Notice to Bidders; of the Special Provisions applying to said Contracts; of the Contract to be entered into with the (or each) successful Bidder; and of the Contract Bond to be furnished with such Contract will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office on and after June 23, 1953.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check, or checks, on a solvent bank, or banks, payable to the order of the Ohio Turnpike Commission, in an amount not less than 5 per cent of the amount bid, and, in the case of a multiple bid, of the highest total which can be obtained by adding the contract prices of any group of contracts which could be awarded to the Bidder on the basis thereof. The Commission may at any time cash any such check. Each such check, or the proceeds thereof, will be held by the Commission as a guarantee that, if any Proposal guaranteed thereby is accepted, a Contract will be entered into and the performance of the Proposal secured. Each such check, or the proceeds thereof, will be returned or forfeited as provided in paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications provided that if there be a forfeiture, it shall be of an amount equal to 5% of the total amount bid in the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A. M., Eastern Standard Time, July 8, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Neil House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION
Notice to Bidders, C-4, et al.

OFFICIAL PROPOSALS

Bids: June 30, 1953

Route 6 (1927), Section 1-L, Route U. S. 46 (1953)

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Construction of Route 6 (1927), Section 1-L, Route U. S. 46 (1953), from Teaneck Road to Grand Avenue, Dualization, Township of Ridgefield Park and Boroughs of Ridgefield and Palisades Park, Bergen County. Federal Project No. UI-117(4). Length 1.053 miles. The principal items of construction are:

Estimated:

ROADWAY ITEMS

44,890 cu. yds. Roadway Excavation—Earth
19,082 cu. yds. Wet Excavation
7,118 cu. yds. Borrow Excavation
29,980 sq. yds. Waterbound Macadam Base Course, 8"
5,500 tons Pavement Type MA-BC-2
3,846 sq. yds. Concrete Pavement Surface, Reinf. 10"
3,202 lin. ft. Reinforced Concrete Culvert Pipe (Various Sizes)
35 Inlets
17,033 lin. ft. White Concrete Curbs (Various Sizes)
L. S. Electric Sign Installations

BRIDGE ITEMS

30,200 lbs. Structural Steel
5,610 sq. ft. Steel Grid Flooring
1.3 M.B.M. Timber Structures
100 lin. ft. Concrete Headers

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 30, 1953, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M. DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the revised Statutes of New Jersey and Supplements, and by P. L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 309 State Street, Hackensack, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes wil be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: State Highway Department, A. Lee Grover, Chief Clerk.

OFFICIAL PROPOSALS

Bids: June 30, 1953

NOTICE TO BIDDERS

Contract C-16

Sealed proposals will be received by the Ohio Turnpike Commission for the performance of Contract No. C-16.

The work covered by Contract C-16 consists generally of the construction of grading, drainage, structures and paving of approximately 4.9 miles in Construction Section 16 of Ohio Turnpike Project No. 1, beginning at a point about 45 feet northwest of the county line between Summit and Cuyahoga Counties at Turnpike Centerline Station 988+00 in Cuyahoga County, and extending eastwardly to a point about 580 feet west of River Road at Turnpike Centerline Station 256+14 in Summit County, and the construction of engineer's office buildings and facilities on or near the site of the work.

In Construction Section 16, the principal structures to be built are one reinforced concrete box culvert, the west abutments of the twin bridges over the Cuyahoga River (the balance of which are being constructed under Contract C-15), and five steel beam bridges of from three to six spans, each, supported on reinforced concrete abutments and bents. The west abutments of the Cuyahoga River Bridge and the abutments of four of the steel beam bridges are to be on steel piles, and the abutments of the other bridge and the bents of all of the steel beam bridges are to be on spread footings.

Approximate quantities of the major items of construction for Contract C-16 are as follows:

Roadway Excavation	2,788,000 cubic yards
Borrow	50,000 cubic yards
Structural Concrete	5,000 cubic yards
Reinforcing Steel	799,000 pounds
Erecting Fabricated Structural Steel	1,355,800 pounds
9" Reinforced Concrete Pavement	16,600 square yards
10" Reinforced Concrete Pavement	159,640 square yards

For this Contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

Copies of the Plans and General Specifications for this Contract are immediately available for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set	15.00
Cross Sections, per set	25.00

Forms or copies of all remaining Contract Documents, including the Proposal for Contract C-16, the Affidavit which must accompany any such Proposal, this Notice to Bidders, the Special Provisions applying to said Contract, the Contract to be entered into with the successful Bidder, and the Contract Bond to be furnished with such Contract, will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office on and after June 15, 1953.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check on a solvent bank, payable to the order of the Ohio Turnpike Commission, in an amount not less than 5 percent of the total amount bid in such Proposal. Said certified check will be held by the Commission as a guarantee that, if the Proposal is accepted, a contract will be entered into and the performance of the Proposal will be secured. Each such check, or the proceeds thereof, will be returned or forfeited as provided in Paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications.

All bids must be received at or before 10:00 A.M., Eastern Standard Time, June 30, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Nell House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of the Contract, if any award be made, will be to the bidder whose proposal is lowest and best and complies with all the prescribed requirements. The Commission reserves the right to reject any or all proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

Dated, June 3, 1953

OFFICIAL PROPOSALS

Bids: June 30, 1953

Route 26 Extension (1927) Section 2E

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Route 26 Extension (1927) Section 2E, from vicinity of Perry Street to Route 26 at Strawberry Street, Planting, City of Trenton, Mercer County. The principal items are:

Estimated:

118 Trees, Deciduous
66 Trees, Evergreen
261 Trees, Small and Flowering
6,454 Shrubs
665 Vines
290 Tons, Peat Humus
840 Cu. Yd. Topsoil

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 30, 1953, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M. DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: State Highway Department, A. Lee Grover, Chief Clerk.

Bids: July 17, 1953

Rapid Transit Project

"Sealed Proposals will be received at the Office of the Department of Purchasing and Stores, Room 205, 1404 East Ninth Street, Cleveland 14, Ohio at 12:00 Noon Eastern Daylight Saving Time, July 17, 1953 and will be opened and read in the Board Room, 1404 East Ninth Street immediately thereafter.

Each bid must be made in accordance with the specifications and must be submitted on the blanks supplied for that purpose, all of which may be obtained at the Office of the Department of Purchasing and Stores of the Cleveland Transit System, but no bid will be considered unless delivered to the said Office of the Department of Purchasing and Stores previous to 12:00 Noon Eastern Daylight Saving Time on July 17, 1953.

The Transit Board reserves the right to reject any and all bids.

Earthwork, Drainage, Pavement and Structures (including two reinforced concrete overpasses, replacement of the Detroit Avenue Bridge, retaining walls and other miscellaneous structural work) from the Cleveland Union Terminals Building to the Intersection of the New York Central and Nickel Plate Railroads at about West 102nd and Detroit Avenue (Rapid Transit Contract S-4) for the Cleveland Transit System as authorized by Transit Board Resolution No. 618-53, adopted May 28, 1953.

Engineer's estimate $3,650,000.00."

OFFICIAL PROPOSALS

Bids: June 25, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 25th day of JUNE 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1 G. L. NICKERSON, District Engineer, 353 Broadway, Albany, N. Y.				
Schenectady	F.A.R.C. 53-58	Schenectady-Duanesburg, Pt. 2, S.H. 5545 Project F-655(7)	2.65	Asphalt Conc. Type 1A, Opt.	$5,000 Plans $10	$95,000
Washington	R.C. 53-55	Dresden Sta-Putnam, S.H. 8225A	2.69	Asphalt Conc. Type 1A, Opt.	6,000 Plans $10	103,000
		DISTRICT No. 2 L. KETCHUM, District Engineer, 109 No. Genesee St., Utica, N. Y.				
Fulton	F.A.R.C. 53-56	Meco-Caroga Lake, S.H. 618 Gloversville-Meco-Phelps, S.H. 246 Project S-700(3)	3.46	Asphalt Conc. Type 1A, Opt.	10,000 Plans $10	186,000
Herkimer & Oneida	M.T. 53-11 S.T. 53-24	New York State Thwy-Mohawk Sect.-Sub. 9 (Utica West City Line-Burch Creek); No. Genesee St. Interchange; Leland Ave. & Schuyler Dyke Rd. (Co. Rd. 37)	2.93 Acc. 6.36 Thy.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide=8.62 Mi. Asp. Conc. Type 1A, Opt.=0.62 Mi. Thwy.; T.C. Graded Grav. (D.S.T.)=0.03 Mi.; Misc. work=0.02 Mi. 6 Hy. Sepa. Comp. I-Beams 145.9', 137.9', 221.3', 146.6', 198.3' & 209', 6 Brs. Closed Boxes 34.3', 35.1', 30.6', 20.3', 24.4' & 25.3'	350,000 Plans $100	5,921,000
		DISTRICT No. 4 E. G. YOUNGMANN, District Engineer, Barge Canal Terminal, Rochester, N. Y.				
Monroe	L.O.S.P. 53-3	Lake Ontario State Pkwy. (Lowden Point Road)	0.30	Grading & F.C. Grav.=0.03 Mi. Bit. Mac. Ty. 1=0.27 Mi. Hy. Sep. Conc. Rigid Frame 83.2'	12,000 Plans $10	225,000
		DISTRICT No. 5 C. R. WATERS, District Engineer, 65 Court St., Utica, N. Y.				
Erie	F.A.C. 53-14	City of Buffalo: Fuhrmann Blvd. & Ramp C (Cont. 3) High Level Bridge Project U-750(6)	1.20	Cem. Conc. Pavt. (BR)=0.08 Mi. Asp. Conc. Opt. (BR)=1.12 Mi. Superstructure on 51 Span Approach Comp. I-Beams & Girders & 6 Sp. Plate Girder Bridge	370,000 Plans $100	6,676,000
		DISTRICT No. 7 R. W. SWEET, District Engineer, 444 Van Duzee St., Watertown, N. Y.				
Franklin	F.A.R.C. 53-54	Nicholville-Dickinson Pt. 2, S.H. 9265; Dickinson West Bangor, S.H. 9076 Project S-305(2)	5.41	Bit. Mac. Opt. (Road Mix)	$15,000 Plans $10	257,000
		DISTRICT No. 8 J. S. BIXBY, District Engineer, Pleasant Valley Rd., Poughkeepsie, N. Y.				
Ulster	F.A.R.C. 53-57	Kingston-Ellenville, Pt. 3 S.H. 141 Project F-462(5)	3.11	Asp. Concrete Type 1A, Opt.	8,000 Plans $10	154,000
		DISTRICT No. 9 F. W. DONOVAN, District Engineer, 71 Frederick St., Binghamton, N. Y.				
Otsego	F.A.R.C. 53-53	Sidney-Unadilla, S.H. 708 Project F-420(11)	2.93	Asp. Concrete Type 1A, Opt.	8,000 Plans $10	143,000
Otsego	F.A.R.C. 53-60	Schenevus-Maryland, S.H. 319 Project F-471(8)	3.62	Asp. Concrete Type 1A, Opt.	11,000 Plans $10	208,000
Schoharie	F.A.R.C. 53-63	Middleburg-East Cobleskill-Shad. Point, S.H. 9241 Howes Cave-Cobleskill, S.H. 5286 Project F-655(6), S-389(1)	8.14	Asp. Concrete Type 1A, Opt. R.C. Slab Br. 32	100,000 Plans $25	1,885,000
		DISTRICT No. 10 M. E. GOUL, District Engineer, Montauk Highway, Babylon, L. I., New York				
Bronx	F.A.M.D.E. 53-5	Major Deegan Expressway Cont. 7B Project UI-UGI-1082(16)	0.44	Grading & Drainage Hy. Sep. Comp. I-Beam 99.2', Hy. Sep. Comp. I-Beam 98.7', Hy. & R.R. Sep. Compt I-Beam 168.8'	110,000 Plans $100	2,000,000
Suffolk	C.A.P. S.P. 53-1 S.A.G. S.P. 53-1	Captree State Pkwy and Sagtikos State Parkway	9.07	8" Colored Cem. Conc. Pavt. 2 @ 02' Wide=0.31 Mi. 8" Cem. Conc. Pavt. Var. Width (Access)=0.74 Mi. Landscaping & Misc. Work=8.02 Mi.	20,000 Plans $15	370,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: July 2, 1953

THE PORT OF NEW YORK AUTHORITY FOUR (4) FOUR-WHEEL DRIVE DUMP TRUCKS EQUIPPED WITH TEN-FOOT SNOWPLOWS AND OTHER EQUIPMENT

Central Shop
Proposal No. 135

Sealed proposal for furnishing four (4) four-wheel drive dump trucks equipped with ten-foot snowplows with power reverse and other equipment, for delivery to the Central Shop, 773 Washington Street, New York, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A. M. (E.D.S.T.) Thursday, July 2, 1953, at which time and place said proposals will be publicly opened and read. Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, N. Y.

Bids: July 7, 1953

Taxiway Route Marker Signs

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT

CONTRACT NYA-220.009

Sealed proposals for the installation of taxiway route marker signs at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:45 P.M. on Tuesday, July 7, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 18, 1953

Bids: July 7, 1953

Newark Airport
Taxiway Route Marker Signs

THE PORT OF NEW YORK AUTHORITY

CONTRACT NA-220.009

Sealed proposals for the installation of taxiway route marker signs at Newark International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:45 P.M. on Tuesday, July 7, 1953 at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 18, 1953

(More Official Proposals on Pages 112 & 113)

OFFICIAL PROPOSALS

Bids: June 23, 1953

City of Eau Claire, Wisconsin Office of the Purchasing Agent Iron and Manganese Removal Plant Legal Notice and Advertisement

Sealed proposals marked "Iron and Manganese Removal Plant" will be received at theh office of the Purchasing Agent of the City of Eau Claire, Wisconsin, up to 9:00 A. M on June 23, 1953, at which time the proposals will be publicly opened and read in the Council Chamber of the City Hall.

The work for which proposals are invited includes the following:

Contract A—Structures and Piping
Contract B—Filter Equipment
Contract C—Plant Equipment
Contract D—Wash Water Tank

Plans and specifications are on file in the office of the City Engineer, Eau Claire, Wisconsin, and in the office of Alvord, Burdick & Howson, Engineers, 20 North Wacker Drive, Chicago 6, Illinois. They may be obtained from the office of the City Engineer, Eau Claire, Wisconsin upon deposit of Twenty-Five ($25.00) dollars for Contracts A or B and Fifteen ($15.00) Dollars for Contracts C or D, which sum so deposited will be refunded to bona fide bidders, if said plans, specifications, etc., are returned in good condition with the proposal.

In case no bona fide bid is made only Fifteen ($15.00) Dollars will be refunded for Contracts A or B and Ten ($10.00) Dollars for Contracts C or D upon the return of plans, specifications, etc., in good condition within ten (10) days after bids are received.

The right is reserved to reject any or all bids or waive any informality in any bid, and to accept any, considered most advantageous to the City.

CITY OF EAU CLAIRE, WISCONSIN
R. W. Beede, Purchasing Agent

Bids: July 13, 1953

Delaware River Port Authority Administration Building Bridge Plaza, Camden, N. J.

THE ANCHORAGE FOUDATIONS—Schedule "A"—Philadelphia Anchorgae Foundation
Schedule "B"—Gloucester Anchorage Foundation
FOR BRIDGE CONNECTING PACKER AVENUE, PHILADELPHIA AND GLOUCESTER CITY, NEW JERSEY—KNOWN AS CONTRACT NO. 2

Sealed bids will be received for the erection of the Anchorage Foundations, known as Schedule "A", Philadelphia Anchorage Foundation, Schedule "B", Gloucester Anchorage Foundation known as Contract No. 2 at the office of the Secretary of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 1:30 P. M. (Eastern Daylight Time) July 13, 1953 at which place and time they will be publicly opened and read.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by certified checks in the sum of $125,000 for each Schedule Bid payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania or Camden, New Jersey, and must not be enclosed with the sealed bids. The Surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work and examine the boring samples.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO, SECRETARY

OFFICIAL PROPOSALS

Bids: July 10, 1953

NOTICE TO BIDDERS

Sealed proposals will be received until 10:00 A.M. EST, July 10, A.D., 1953, in the office of the City Engineer. Plans, Speciderdale, Florida for construction of a Water Treatment Plant and appurtenances.

Bidding blanks may be obtained from the office of the City Engineers. Plans, Specifications, and Contract Documents are on file in the office of the City Engineer.

A deposit of $25.00 for Plans and Specifications, and of $15.00 for each additional set of plans or specifications, will be required. All deposits for plans and specifications will be refunded upon their return in good condition within 10 days of the opening of bids.

A certified check for 2% of the total amount of the bid, made payable to City of Fort Lauderdale, Florida, shall accompany each proposal as evidence of good faith and responsibility of the Bidder. This check shall be retained by the payee as liquidated damages should the Bidder refuse or fail to enter into a contract with the payee for the execution of the work embraced in the Proposal, in the event the Proposal of the Bidder is accepted.

The City Commission reserves the right to reject any or all bids.

H. Milton Link
City Manager

Contract 28, 28A, 28B, 28D, 28E

Sealed proposals will be received by the West Virginia Turnpike Commission for:

The work to be done under Contract 28 consists in performing the required grading and drainage for approximately six and seven-tenths (6.7) miles of the West Virginia Turnpike including the construction of substructures for nine bridges and three reinforced box culverts. This work is located between the town of Chesapeake, Mile 80.3, Kanawha County, and the southeast bank of Kanawha River, Charleston, West Virginia, Mile 87.0, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

Contract 28 consists of the combined quantities of Contract 28A, 28B, 28D, and 28E.

The principal items of work include:

	Approximate Quantities 28A	28B	
Clearing and Grubbing	35	35	Acres
Excavation—Unclassified	540,000	420,000	Cu. Yds.
Borrow Excavation —Unclassified	..	..	Cu. Yds.
Borrow Excavation —Rock	..	..	Cu. Yds.
Concrete	1,880	3,215	Cu. Yds.
Reinforcing Steel	20,000	247,000	Pounds
Steel Piles (Furnish)	..	419,000	Pounds
Steel Piles (Driven)	..	7,920	Lin. Ft.
Culvert Pipes and Underdrain	3,000	2,100	Lin. Ft.
	28D	28E	
Clearing and Grubbing	25	35	Acres
Excavation—Unclassified	60,000	85,000	Cu. Yds.
Borrow Excavation —Unclassified	240,000	1,300,000	Cu Yds.
Borrow Excavation —Rock	150,000	7,000	Cu. Yds.
Concrete	475	3,370	Cu. Yds.
Reinforcing Steel	28,000	229,000	Pounds
Steel Piles (Furnish)	96,000	1,383,000	Pounds
Steel Piles (Driven)	1,810	26,070	Lin. Ft.
Culvert Pipes and Underdrain	3,000	3,000	Lin. Ft.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A. M. Eastern Standard Time, and thereafter at the House of Delegates Chamber, State Capitol, Charleston, West Virginia until 10:00 A. M. Eastern Standard Time, on June 30, 1953, at which time and place said proposals will be publicly opened and read.

WEST VIRGINIA TURNPIKE COMMISSION
D. H. Morton, Chairman

June 3, 1953

Bids: July 8, 1953

Refuse Incinerating Plant

SOUTHEASTERN OAKLAND COUNTY GARBAGE AND RUBBISH AUTHORITY MICHIGAN

Sealed proposals invited by the Southeastern Oakland County Garbage and Rubbish Authority, Michigan, for the construction of a Refuse Incinerating Plant, will be received by the Secretary of the Authority at 23646 Woodward Avenue, Pleasant Ridge, Michigan, until 11:00 A.M., Eastern Standard Time, July 8, 1953, at which time they will be publicly opened and read aloud.

The work is divided into three Contracts. Each bidder may submit a proposal for any Contract, for all Contracts or for any combination of Contracts.

Contract A—Building, comprises the construction of the incinerating plant building, of reinforced concrete, structural steel and metal walls and roofs, including all work not specifically included in in other Contracts.

Contract B—Furnaces and appurtenances, comprises the construction of the incinerating furnaces, combustion chambers, subsidence chambers, flues, forced draft equipment and other appurtenant work.

Contract C—Chimney, comprises the construction of a radial brick chimney with firebrick lining, above the concrete foundation.

The Instructions to Bidders, Proposal, Agreement, Specifications, Plans, and Form of Performance Bond may be examined at the office of the Authority, 23646 Woodward Aveune, Pleasant Ridge, Michigan, and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of these Contract Documents may be obtained upon the deposit of $25.00 for each set. Any bidder, upon returning such set promptly and in good conditions, will be refunded his deposit.

No proposal will be considered unless it is accompanied by a certified check or bank draft made payable to the Southeastern Oakland County Garbage and Rubbish Authority, certified by an incorporated bank or trust company in the amount of not less than five per cent of the bid. In the case of the bidder's failure to enter into the Contract for the doing of the work or improvement or to furnish the bond guaranteeing the performance of the Contract, such certified check shall be and become the property of the Southeastern Oakland County Garbage and Rubbish Authority as the agreed and liquidated amount of damages to the Authority, caused by such failure. The checks of all excepting the three lowest formal bidders on each Contract will be returned within thre days after the opening of bids, while the remaining checks will be returned within 48 hours after the approval of the executed Contract between the Authority and the accepted bidder, or if no contract has been so executed within 45 days after the date of opening of bids, upon demand of the bidder at any time thereafter so long as the bidder has not been notified of the acceptance of the bidder's bid.

The Authority reserves the right to waive any informalities in or to reject any or all bids and to accept the bid which is deemed most favorable to the interest of the Authority, after all bids have been examined and canvassed.

SOUTHEASTERN OAKLAND COUNTY GARBAGE AND RUBBISH AUTHORITY
by ASHTON J. BERST
Its Secretary

Dated at Pleasant Ridge, Michigan
May 27, 1953

for

DIRECT CONTACT
with the
MOST ACTIVE BUYERS
throughout the field of
ENGINEERING
CONSTRUCTION—

Use the
Searchlight Section
ENGINEERING NEWS-RECORD

OFFICIAL PROPOSALS

Bids: August 3, 1953

Construction of Sanitary Sewers & Appurtenances

NOTICE TO BIDDERS

Sealed bids on eight (8) contracts will be received by the Authority of Springfield Township, Montgomery County, Pennsylvania in the Springfield Township Building, 402 Bethlehem Pike, Springfield Township, Montgomery County, Pennsylvania for the construction of approximately 29 miles of sanitary sewers and appurtenances in Springfield Township, until the time and date shown in the following schedule:

Contract #9 and Contract #10
8 P.M. E.D.S.T. July 1, 1953
Contract #10A and Contract #11
8 P.M. E.D.S.T. July 8, 1953
Contract #12 and Contract #13
8 P.M. E.D.S.T. July 15, 1953
Contract #14 and Contract #15
8 P.M. E.D.S.T. July 22, 1953

Bids will be opened and read publicly at the time and place stated above, but no bid shall be allowed to be withdrawn for a period of 60 days thereafter.

Plans, specifications and contract documents may be seen and/or obtained at the office of George B. Mebus, Consulting Engineer, Northwestern National Bank Building, Glenside, Pennsylvania. A deposit of $25.00 will be required for each set of plans and specifications for each contract, of which $20.00 will be refunded for each set upon the return of plans and specifications in good condition to the Consulting Engineer's office by 5:00 P.M. August 3, 1953.

A certified check or bid bond approved by the Authority in the amount of 5% of the amount of the total bid tendered, made payable to the Authority of Springfield Township, shall accompany each bid tendered. The certified checks or bid bonds of all but three low bidders, will be returned within forty-eight hours after the award of the contract. The certified checks or bid bonds of the three low bidders, will be returned upon the execution of the contract.

Bids shall be submitted, bound in the specifications in a sealed envelope addressed to the Authority of Springfield Township and shall be plainly marked showing the contract/s for which bids are submitted.

The Authority reserves the right to reject any or all bids and waive informalities or take such other action that it may deem to be in the best interest of the Authority, and as may be permitted by law.

Authority of Springfield Township
By Thomas Reath, Chairman

Bids: June 30, 1953

NOTICE TO BIDDERS

Contract C-2
Contract C-3
Contract C-2 & 3

Sealed proposals will be received by the Ohio Turnpike Commission for the performance of each of the contracts enumerated above.

The work covered by Contract C-2 consists generally of the construction of grading, drainage, structures, and paving of approximately 5.3 miles in Construction Section 2 of Ohio Turnpike Project No. 1, beginning at a point about 250 feet east of Western Reserve Road at Turnpike Centerline Station 734+70 in Mahoning County, and extending eastwardly to a point about 500 feet east of South Range Center Road at Turnpike Centerline Station 1015+00 in Mahoning County, and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-3 consists generally of the construction of grading, drainage, structures, and paving of approximately 4.7 miles in Construction Section 3 of Ohio Turnpike Project No. 1, beginning at a point about 400 feet west of Raccoon Road at Turnpike Centerline Station 489+30 in Mahoning County, and extending eastwardly to a point about 250 feet east of Western Reserve Road at Turnpike Centerline Station 737+00 in Mahoning County, and the construction of engineer's office buildings and facilities on or near the site of the work.

The work covered by Contract C-2 & 3, which covers a combination of Construction Sections 2 and 3, is the construction as above generally described for the individual construction sections, taken together.

In Construction Section 2, the principal structures to be built are one reinforced concrete box culvert, and eight steel beam bridges of from one to five spans each, supported on reinforced concrete abutments and bents. The abutments of six of the bridges are to be on steel piles and the abutments of two of the bridges are to be on spread footings. All of the bents are to be on spread footings.

In Construction Section 3, the principal structures to be built are four reinforced concrete box culverts, and six steel beam bridges of from three to five spans each, supported on reinforced concrete abutments and bents. The abutments of five of the bridges are to be on steel piles and the abutments for one bridge are to be on spread footings. The bents of four bridges are to be on spread footings and the bents of two bridges are to be on steel piles.

Approximate quantities of the major items of construction for Contract C-2 are as follows:

Roadway Excavation	1,930,000 cubic yards
Structural Concrete	7,300 cubic yards
Reinforcing Steel	1,061,000 pounds
Erecting Fabricated Structural Steel	2,492,500 pounds
10" Reinforced Concrete Pavement	169,000 square yards

Approximate quantities of the major items of construction for Contract C-3 are as follows:

Roadway Excavation	1,028,000 cubic yards
Structural Concrete	10,400 cubic yards
Reinforcing Steel	1,348,000 pounds
Erecting Fabricated Structural Steel	2,287,000 pounds
10" Reinforced Concrete Pavement	128,000 square yards

For each contract, fabricated structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

This is a readvertisement of the work to be done on each of Construction Sections 2 and 3. Proposal forms, Plans, Cross Sections and Special Provisions for each of Contracts C-2, C-3 and C-2&3 as formerly advertised are now obsolete. Each person who bid pursuant to the former advertisement and desires to bid again for these construction sections, or any of them, must obtain a new set of Contract Documents for the letting advertised in this notice, except that he need not obtain a new set of General Specifications or of those Supplemental Specifications already in his possession and applicable to any or all of these contracts, as set forth in the Special Provisions comprising a part of the new Contract Documents.

Copies of the Plans and General Specifications for said Contracts will be available on and after June 4, 1953 for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; of the Affidavit which must accompany any such Proposal; of this Notice to Bidders; of the Special Provisions applying to said Contracts; of the Contract to be entered into with the (or each) successful Bidder; and of the Contract Bond to be furnished with such Contract will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office on and after June 15, 1953.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check, or checks, on a solvent bank, or banks, payable to the order of the Ohio Turnpike Commission, in an amount not less than 5 percent of the amount bid, and, in the case of a multiple bid, of the highest total which can be obtained by adding the contract prices of any group of contracts which could be awarded to the Bidder on the basis thereof. The Commission may at any time cash any such check. Each such check, or the proceeds thereof, will be held by the Commission as a guaranty that, if any Proposal guaranteed thereby is accepted, a Contract will be entered into and the performance of the Proposal secured. Each such check, or the proceeds thereof, will be returned or forfeited as provided in paragraph G-3.03 and G-3.06 of the aforesaid General Specifications provided that if there be a forfeiture, it shall be an amount equal to 5% of the total amount bid in the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A. M., Eastern Standard Time, June 30, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Neil House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

Bids: June 30, 1953

Route 4 (Parkway) Section 9J, Route 29 (1927) Eastbound Relocation Route U. S. 22 (1953)

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Route 4 (Parkway) Section 9J, Route 29 (1927) Eastbound Relocation, Route U. S. 22 (1953), Planting, Union Township, Union County. The principal items are:

Estimated:

90	Trees, Deciduous
22	Trees, Evergreen
176	Trees, Small and Flowering
1,456	Shrubs
104	Vines
85	Tons Peat Humus
240	Cu. Yd. Topsoil

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 30, 1953, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M. DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelope will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: State Highway Department,
A. Lee Grover, Chief Clerk,

U. S. Government

St. Paul District, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P.M., C.S.T., 23 June 1953, and then publicly opened for Repairs to Ogee Section of Lock and Dam No. 1, Stage No. 3, Mississippi River, Minneapolis, Minnesota.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE: *(Not available for equipment advertising)*
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.
DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York City Office 330 W. 42nd St., N. Y. 36 for July 2nd issue closing June 22nd.

ESTIMATORS

National organization requires experienced estimators. Applicants should be familiar with the construction of large industrial projects.

Engineering and Purchasing experience beneficial.

Excellent opportunity for men between 30 and 45 years of age.

Replies will be held in strict confidence and should contain a complete resume of education and experience.

P-8142, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS - GEOLOGISTS

Technicians experienced in Soils—Concrete and Asphalt Control Work.

Also

Graduate Engineers with P.E. Registration having extensive experience in Soils—Concrete and asphalt. Give complete details including salary.

TOLEDO TESTING LABORATORY
1810 No. 12th St. Toledo 2, Ohio

WANTED

An Alert Mechanical Engineer with Some Knowledge of Electrical Engineering . . . Must Be a Good Calculator . . .

PHILIPS & DAVIES, INC.
KENTON, OHIO

WANTED—An experienced
CONSTRUCTION SUPERINTENDENT
To supervise erection of a 50,000 KW, 1450 psi addition to a power station and also a construction accountant for this work. Estimated time for construction 12 to 18 months. Construction to start January, 1954.

P-8139, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALES ENGINEERS

We need two men with sales experience and engineering training, preferably in civil engineering. Selected men will be given thorough training. Work will be with state and city highway officials. Some knowledge of highway construction helpful. Salary and expenses. Give full information about yourself.

RW-8048, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

SENIOR ENGINEER Aides and Junior Highway Engineers wanted for expanding program of State of Connecticut. Salaries start at $3900 and $4920. Apply to the office of the Personnel Director, Department 1A, State Office Building, Hartford, Connecticut.

CIVIL ENGINEERS; Chief of Party; and Draftsman experienced in general civil engineering and surveying office work. Submit qualifications, experience and salary requirements. W. Franklin Buchanan, C.E., 405 Main Street, Metuchen, N. J.

EXPERT, YOUNG, Male Stenographer wanted, machine or pencil shorthand, in main office of large Illinois construction company. High pay, group insurance, pension and profit-sharing plans, annual paid vacation, other unusual advantages. Replies confidential. P-8135, Engineering News-Record.

ESTIMATOR WANTED by large General Contracting Firm located in Central Illinois. Applicant to be under 40 years of age, experienced in estimating all types of General Building Construction. If interested, advise age, education, experience and salary desired. This is an excellent opportunity for competent estimator as our Chief Estimator is retiring in near future. P-8112, Engineering News-Record.

CIVIL ENGINEER wanted for design of Airfield Grading and Drainage and related work with Consulting Engineers on New York City. Permanent Position. P-8113, Engineering News-Record.

TOP FLIGHT Construction Equipment Salesman for Cincinnati area new company representing nationally known highly regarded accounts. Applicants must have proven sales record, honesty, integrity, sincerity beyond question. Liberal guarantee with liberal bonus. Opportunity to grow with company to key executive position. P-8231, Engineering News-Record.

WANTED—GRADUATE Civil Engineer, some experience in the structural field preferred, by long established engineering promotional and educational organization, to be a representative in the Long Island area. Age 25 to 40. Give resume of education, engineering experience, salary requirements in reply. P-8208, Engineering News-Record.

WANTED—GRADUATE Civil Engineer, some experience in the paving and public works field preferred, by long established promotional and educational organization, to be a representative in the Central New York State area. Age 25 to 40. Give resume of education, engineering experience, and salary requirements in reply. P-8209, Engineering News-Record.

CIVIL ENGINEERING, Master's or Ph.D. degree desired. Rank and salary. Instructor on up in higher grade depending on experience. Teach mechanics, fluid mechanics, testing materials. All laboratories new. Interesting opportunity to develop latest new fluid mechanics laboratory. East. P-8081, Engineering News-Record.

CONTRACTOR'S ENGINEER—Field Superintendent by a medium-sized general contracting company doing heavy construction work. Located within suburbs New York City. Applicant must have previous experience with a general contractor taking off quantities, preparing estimates and supervising projects in field to completion. Maximum age forty years. Must assume administrative responsibility from bidding to completion of projects. In reply state age, experience, reference, education, salary expected and when available. P-8188, Engineering News-Record.

(Continued on the opposite page)

STRUCTURAL ENGINEERS

To engineer and design large chemical, gas, and petroleum processing plants. 5 years pertinent experience required.

All positions in modern, centrally located offices in Louisville, Kentucky. Send complete resume to the personnel department

THE GIRDLER COMPANY
A Division of National Cylinder Gas Company
LOUISVILLE 1, KENTUCKY

RESIDENT ENGINEER CONSTRUCTION ENGINEERS

Instrumentmen, Inspectors, Materials Engineers, experienced on heavy bridge and railroad construction; qualified in concrete, asphalt, soils controls; surveys; contract administration. Send detailed resume to:

Box 265, Milan, Ohio

To EMPLOYERS who advertise for MEN:

WHEN there are many applicants for a single position it frequently happens that the only letters acknowledged are those of the most promising candidates. Others may not receive any indication that their letters have even been received by a prospective employer much less given consideration. These men often become discouraged, will not respond to future advertisements, and sometimes question their bona fide character.

Every advertisement printed in the Searchlight Section is duly authorized.

It will help to keep our readers interested in this advertising if you will acknowledge every application received, even if you merely return the letters of unsuccessful applicants with "Position filled, thank you" written or stamped on them. If you don't care to reveal your identity, mail them in plain envelopes.

We sugget this in a spirit of cooperation between employers and the men replying to Positions Vacant advertisements.

★

"Put yourself in the other fellow's place."

★

Classified Advertising Division

McGraw-Hill Publishing Co., Inc.

JR. CIVIL ENGINEERS

FOR CALIFORNIA

Permanent positions in California's huge highway program. Wide choice of locations. High-grade professional experience. Open to CE graduates or to non-graduates with 2 years' experience. $376 to start, raise in six months.

STATE PERSONNEL BOARD
1015 L Street Sacramento 14, Calif.

WANTED

PROJECT MANAGER SUPERINTENDENTS

with extensive experience in hospital and institutional construction for work in Eastern United States. Good salary and incentive bonus. Forward resume of experience and references to:

P-8082, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

POSITION VACANT
(Continued from preceding page)

ENGINEER—DESIGN, analysis and tests of light steel structures. Research organization in Princeton, N. J. Indicate background, salary and when available for interview. P-8196, Engineering News-Record, or phone—Princeton 1-4332.

SELLING OPPORTUNITY OFFERED

SALES ENGINEER—Prominent Construction Machinery concern needs man between 25 & 35 to travel Southeastern territory from Baltimire South. Previous experience not necessary, but desirable. Salary and commission. RW-8186, Engineering News-Record.

EMPLOYMENT AGENCIES

WANTED-ENGINEERS. Designers, Draftsmen-Structural, Piping, M.E., C.E., E.E. and Industrial, also Teachers and Chemists. Cleveland Engineering Agency, 2132 E. 9, Cleveland.

POSITIONS WANTED

EXPERIENCED ARCHITECTS Superintendent available now. Will go where the work is. Over 20 years Construction experience. PW-8063, Engineering News-Record.

SUPERINTENDENT: 20 YEARS experience Sewerage treatment plants, Highway bridges, Steel mills, schools, etc. Excellent references, will travel. PW-8177, Engineering News-Record.

GENERAL SUPERINTENDENT 25 years diversified heavy construction experience. Good background, know men and equipment. Available any location immediately. PW-6225, Engineering News-Record.

REGISTERED PROFESSIONAL engineer, 56, desires position in Southwest, B.E. & M.S. degrees, 25 years in sewage treatment. Minimum salary $6000. PW-8173, Engineering News-Record.

CONSTRUCTION—CIVIL Engineer, 15 years of complete responsibility construction of buildings, reinforced concrete structure, roads, airports. Extensive foreign and domestic experience. Available immediately. PW-8185, Engineering News-Record.

POSITION WANTED. Engineering experience seventeen years; ten years experience on water, sewerage, paving and other municipal works. Experienced on preliminary surveys, drafting, design, layout and supervision of above works. Available after one week notice. PW-8191, Engineering News-Record.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-third year. Write today.*

WILSON *Engineering Corp.*

College House Offices—HARVARD SQUARE, CAMBRIDGE, MASS.

SUPERINTENDENTS AND PROJECT MANAGERS TRAINING COURSE

All instructions by mail. Send today for sample lesson and complete details

Geo. E. Deatherage & Son, Dept. 101
411 S. 5th Ave. Lake Worth, Florida

POSITIONS WANTED

PROJECT MANAGER or General Supt, age thirty-eight. Desire connection with a sound company on a profit sharing basis. Thoroughly experienced in heavy and highway construction, including extensive concrete paving. Full experience resume on request. PW-8189, Engineering News-Record.

AMBITIOUS YOUNG Civil Engineer experienced in blast furnace and steel mill construction; competent in field supervision, layout and take-off; Interested in position with contractor or steel producer. PW-8200, Engineering News-Record.

CIVIL-SANITARY Engineer-Graduate, registered, 10 years varied experience Consultant's offices. Mainly water supply-specs., design, studies. Some experience materials, sewage treatment. Prefer southern N.E. but will consider any location. PW-7944, Engineering News-Record.

GEOLOGIST AND Engineer, PE, AIME registered over 30 years wide experience Petroleum and Natural Gas Exploration, Production, Transmission, distribution, Refining and Marketing desires position Southwest or Far West. Now located Dallas, Texas. Minimum weekly salary $125. PW-8210, Engineering News-Record.

GENERAL SUPERINTENDENT: 30 yrs. experience dirt moving, hard rock, sewers, bridges, highway paving, foundations, industrial buildings. Mass concrete, a combination of building & heavy construction. Very cost conscious, available at once. PW-8211, Engineering News-Record.

OFFICE MANAGER, Accountant Auditor—Now employed desires foreign employment—18 years diversified experience in private and government heavy, power plant refinery and housing construction. All phases of accounting, payroll, etc. PW-8213, Engineering News-Record.

GENERAL SUPT. or Supt. C.E., P.E. Age 39. Experienced in commercial and industrial buildings & some heavy construction as Supt. Estimator and General Manager. Presently employed as project engineer on tunnel construction. Desire connection. PW-8215, Engineering News-Record.

CIVIL ENGINEER, exprd. Take-Off man, seeks situation in N.Y.C. PW-8216, Engineering News-Record.

ENGINEER REG. P.E. Arbitration of contractors' claims. Reports. 45 years experience, design, construction. Turnpikes, Tunnels, Schools, etc. PW-8219, Engineering News-Record.

CONSTRUCTION ENGINEER C.E. Graduate. 25 years experience design, estimating and supervision of construction of housing, commercial buildings, utilities, roads, harbor works, earthwork, heavy construction. 16 years Tropics. Fluent Spanish. Foreign or domestic. PW-8220, Engineering News-Record.

CONSTRUCTION ENGINEER—Qualified journeyman in several trades. Completely experienced in material takeoff, schematic and shop drawings, cost analysis, designing, estimating and superintending the construction of bridges, hospitals and industrial construction. PW-8230, Engineering News-Record.

CIVIL ARCHITECTURAL Engineer registered N. J. 17 years diversified experience. Design and construction refinery and chemical plant structures and foundations. Experience includes reports, specifications, estimating, supervision, inspection. Available June 30. PW-8104, Engineering News-Record.

GENERAL SUPERINTENDENT employed on large project nearing completion available 30 to 60 days. Heavy construction experience covers large bridge power houses industrial plants machinery erection and other types of difficult work. Can furnish excellent character and ability references. PW-8098, Engineering News-Record.

CONSTRUCTION SUPERVISOR: 40, drainage, grading, paving, project experience on highways, airdromes, earthworks. Reply PW-8126, Engineering News-Record.

POSITIONS WANTED

CONSTRUCTION SUPERINTENDENT — all types of Industrial and Commercial construction. Graduate Civil Engineer. 39 years old. 18 years construction experience. Presently construction superintendent Steam Electric Power Plant. Available July. PW-7974, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and Engineer desires work in New England. Experienced industrial plants, housing, heavy construction, bridge and marine work, skilled estimator. PW-7967, Engineering News-Record.

WORK WANTED

STRUCTURAL SHOP Details. Made and Checked. Use our 30 years experience. WW-8072, Engineering News-Record.

FOR SALE
TWO MOBILE REPAIR SHOPS
Designed to provide mobile facilities for maintenance and repair of construction and industrial equipment; vehicles, disaster and civil defense services, etc. Test used only, equal to new. Write
EXPORT TRADING CO.
1921-½ Talmadge Ave., Los Angeles 27, California.

FOR SALE—PRICED RIGHT
100,000 sq. ft. Used "Uniform" Panels
Assorted Sizes—Reasonably Good Condition
SOUTHEASTERN-LOVING-DOYLE AND RUSSELL
Fort Knox, Kentucky

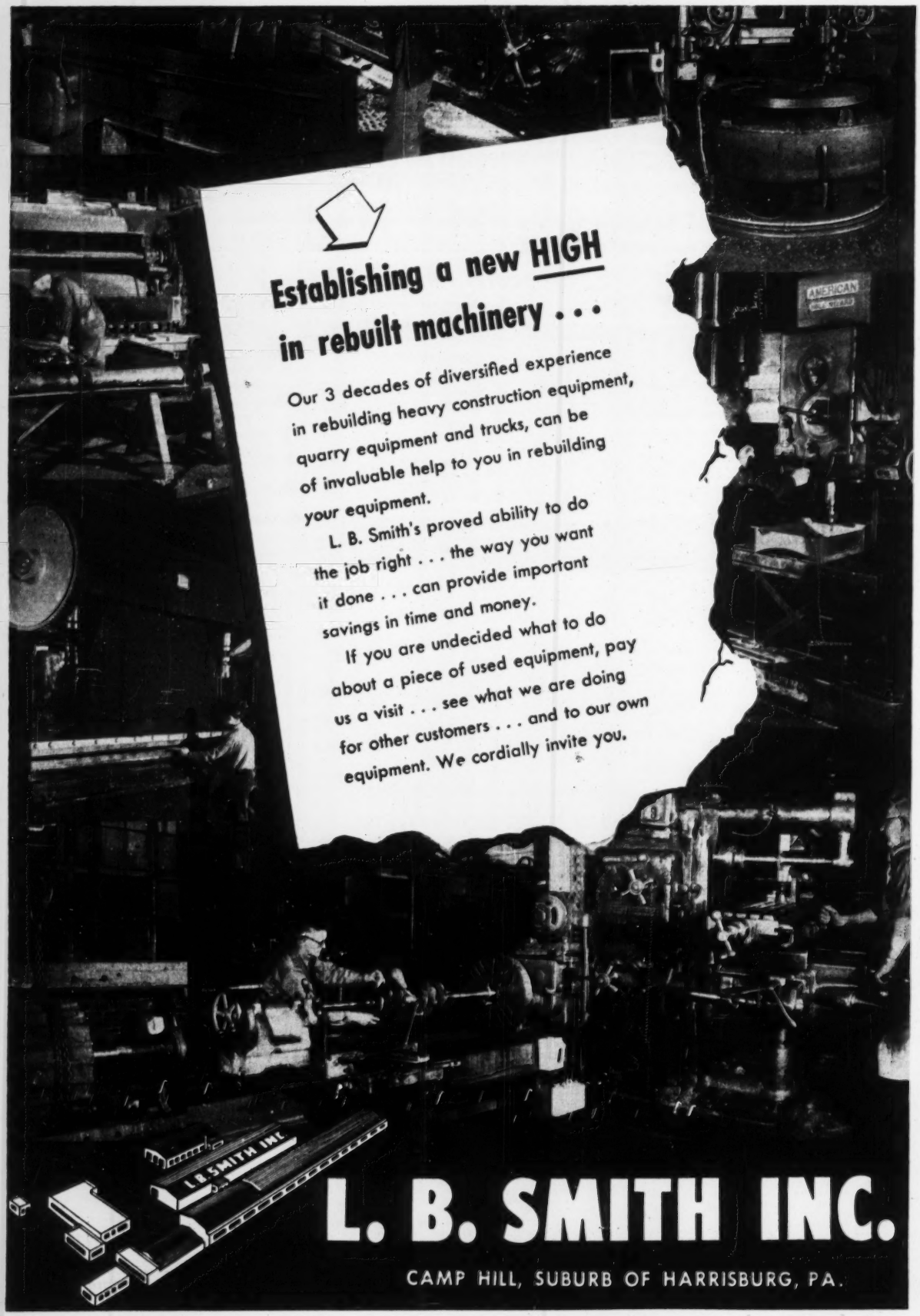
— PILE HAMMERS —
"Vulcan" #O & OR Standard Base
"Vulcan" #1 Standard Base
"McKiernan-Terry" 9B3 & #7 Flat or Bell Base.
FOR SALE or FOR RENT
TINKLER EQUIPMENT CO.
2590 Oakdale Ave., San Francisco 24, Calif.

For Sale
NEW 1953 34E
KOEHRING DUAL PAVER
GM Diesel, Admix Tank—Unused. 2 c.y. Mixermobile—45' Tower New 1950 Excellent Condition.
W. S. BELLOWS CONSTRUCTION CORP.
P. O. Box 2132 Houston 1, Texas

FOR SALE
4 SUPER C TOURNAPULLS
Overhauled and reconditioned. Good rubber. Now working. Reasonable.
Write Box 1, Branchville, Md.
or call Appleton 7-4483

For Sale
1951 ¾ yd. LIMA PAYMASTER Dragline
Wide Pads, Long Crawlers, 2-71 GM Deisel 35' or 40' boom, ¾ yd. Page or 1 yd. Hendrix Drag Bucket
PAUL J. CLARK
***Phone* 241R4 Columbus Grove, Ohio**

Caterpillar D 4 Hydraulic Bulldozer, 5 T., Wide Gauge, Hyster Winch, completely rebuilt. $3,750.
International TD 9 Diesel Crawler, Wide Gauge, Carco Winch, completely rebuilt. $3,500.
Allis-Chalmers HD 14 Bulldozer, D D P C U completely rebuilt including engine, excellent condition. $4,950.
All real Bargains—Terms—Inspection Invited.
Sun Valley Farms
Rte. 202, Oakland, N. J. Ramsey 9-0040, evenings



Establishing a new HIGH in rebuilt machinery . . .

Our 3 decades of diversified experience in rebuilding heavy construction equipment, quarry equipment and trucks, can be of invaluable help to you in rebuilding your equipment.

L. B. Smith's proved ability to do the job right . . . the way you want it done . . . can provide important savings in time and money.

If you are undecided what to do about a piece of used equipment, pay us a visit . . . see what we are doing for other customers . . . and to our own equipment. We cordially invite you.

L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 2 NO. 2

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Gardner-Denver 365 cu. ft. diesel.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
1036 Cedarapids jaw. Rebuilt.
10x7 Allis Chalmers lake type jaw crusher. Rebuilt.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
60" dia. x 14' long Traylor revolving screen. Rebuilt.
24" Wemco single pitch sand screw. New condition.
15 cu. yd. Cedarapids sand drag. New.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.
24" Dia. x 30" face magnetic pulley.

TRUCKS—TRAILERS

27FD Euclid rear dumps.
1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77, 1½-yd. diesel.
Lorain 75B, 1¼-yd. diesel.
Lorain 57, 1¼ yd. diesel, rebuilt.
Lorain L-50-I, 1-yd. diesel.
Lorain MC-2 Moto-Crane
Lorain 40 truck crane on Mack 3-axle truck.
Link Belt LS85 diesel combination.
Unit 514, ½-yd. gasoline crawler shovel, rebuilt.
Lorain 30A, ½-yd. gas combination.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 638 for ¾-yd. to 1-yd. crane.
Lorain 77 crane boom, 45'.

BACKHOE BUCKETS & ATTACHMENTS

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #8105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

TRUCK MIXERS

3-yd. Challenge high discharge mixer on International chassis.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching machine 18" to 24" cutting width, 7' depth.

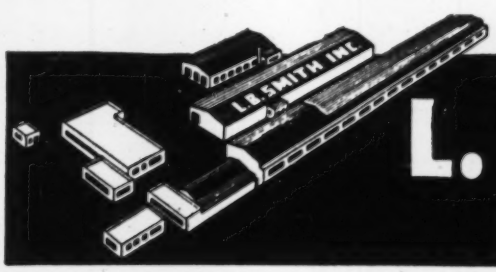
PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GASOLINE AND DIESEL ENGINES

Caterpillar D-13000, rebuilt.
Murphy ME-6, & ME-48, rebuilt.
Caterpillar D8800.

Phone HARRISBURG, PA. 7-3431

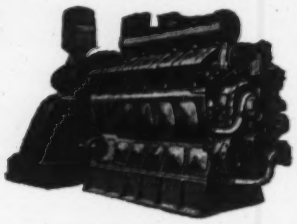


L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

DIESEL POWER

IMMEDIATE SHIPMENT
• PURCHASE OR RENTAL
UNIT CAPACITIES—10 TO 2475 KVA
A.C.—50 AND 60 CYCLES
• ALSO D.C. UNITS



A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1980	Nordberg	T8-217	2800	225	320	Enterprise	D8G-6	560	450
1500	Fairbanks Morse	38E16	2000	300	300	General Motors	8-268A	450	1200
1136	Fairbanks Morse	38D	1600	720	250	Fairbanks Morse	37-E	375	360
1100	General Motors	16-278A	1600	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	150	Worthington	CC-4	225	450
500	Baldwin	VO-8	750	514	150	Buckeye	80	240	600
500	General Motors	8-278A	750	720	100	Worthington	BB-5	150	600
500	General Motors	8-567	720	720	100	General Motors	3-268A	150	1200
400	Ingersoll-Rand	8-8	600	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200

A. G. SCHOONMAKER COMPANY, INC.
ENGINE DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

FOR SALE or RENT

1½ yd Koehring 605 Diesel Crane 140' bm. GM Diesel. Long Tracks.
30 ton Industrial Brownhoist Gas Locomotive Crane. 70' bm.
200 HP 3D Elec. Hoist and Swinger.
65 ton G.E. Diesel Elec. Locomotive.
45 ton G.E. Diesel Elec. Locomotive.
25 ton American Stiffleg Derrick.
500 CFM G-D Portable Diesel Compr.
750 CFM G-D Compr. 125 HP Motor.
130 HP Christian 2D Diesel Hoist.
60 ton Clyde Elec. Revolver or Gantry.

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St. St. Louis 1, Mo.

Pile Driving Equipment

Vulcan and McKiernan-Terry
Steam Pile Hammers and Extractors
Pile Driving Accessories
Drop Pile Hammers and Caps
Steel Sheet Piling

CONTRACTORS MACHINERY Co.
2637 Southwest Blvd. Kansas City 8, Mo.
Phone Valentine 4740

FOR SALE

DIESEL ELECTRIC LOCOMOTIVES

STANDARD GAUGE

1—25 ton—1947—150 HP
1—44 ton—1943—380 HP
1—70 ton—1948—600 HP
1—80 ton—1941—500 HP
2—100 ton—1943—660 HP
EXCELLENT CONDITION

Frank M. Judge & Co., Inc.
7010 Empire State Bldg. N. Y.

PARTS FOR YOUR ASPHALT PLANT

We have for sale — the complete running gear and power erecting equipment for Cedarrapids Model E Asphalt Plant.

CONTRACTING & MATERIAL COMPANY
1235 Dodge Avenue Evanston, Ill.

LOCOMOTIVES
1—Plymouth—8 Ton 30" Ga.—Gas.
1—Brookville 10T-30" Ga. Diesel—Like New.
1—Vulcan 14 Ton—30" Ga., Diesel.
3—Whitcomb—15 Ton—36" Ga.—Diesel.
2—Plymouth 8 Ton Gas. Std. Ga.
1—Whitcomb 30 Ton Std. Ga. Diesel.
1—G.E. 80 Ton Diesel-Elec.
3—G.E. 100 Ton Diesels-Elec.
Brookville 8 Ton 36" Ga. Gas.
Brookville 6 Ton—36" Ga. Diesel.

3—HOPPER CARS—50 TON. EXCELLENT. STD. GA.

2—Conway Mod. 75 Muckers. #256 & #306. Bargains.
Southwark 500 Ton Hydraulic Press—High-Speed—Like New.
Southwark 100 Ton Hydraulic Press.
Mundy 2-Drum Elec. Hoist—300 H.P. Like New.
Bridgeford Axle Lathe. 10—50 Ton Hopper Cars.
"Burro" Model 20 Gas Crane.

R. H. BOYER
2005-13 W. Bellevue St. Phila. 40, Pa.
Phone Sagamore 2-7132

SURPLUS EQUIPMENT

FOR SALE OR RENT
Rebuilt—A1 Condition

1 Model 6 N.W. Shovel, diesel
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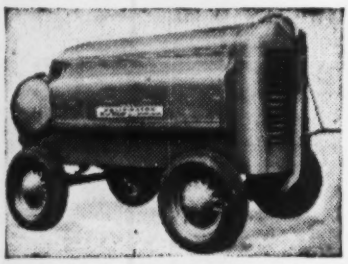

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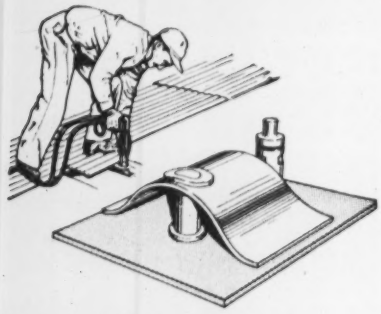

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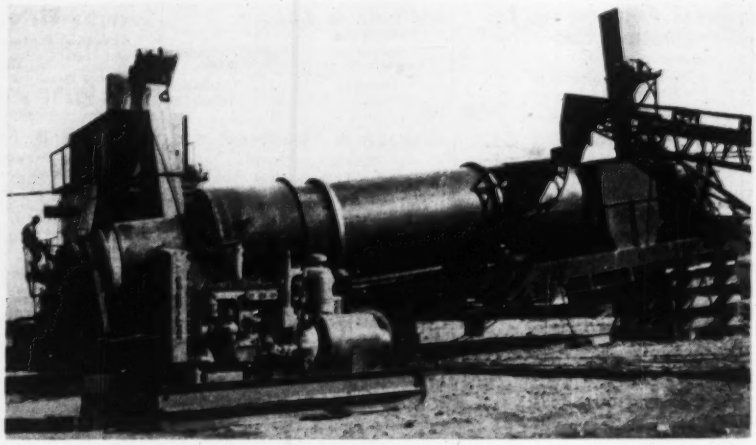


HOT MIX PLANT in operation is mounted on blocks with front bolster removed.

Medium output unit extends Pioneer line of portable hot-mix plants

With a rated capacity of 60 to 80 cu. yds per hour, Pioneer's Model 81 has been designed to complement the company's line of central hot-mix bituminous plants in the medium output range. Major features of the new plant are portability and all-electric drive.

The Model 81 plant consists of two main units. On one unit are the burner, combustion chamber, drier, dust collector and fan, all mounted on a single pneumatic-tired chassis. On the other unit are the gradation screen, three-aggregate compartment bin, continuous apron feeder, mixer elevator and pugmill, also on a single pneumatic-tired chassis.

The feeder to the drier may be one of three types: a 24-in. reciprocating plate type; a two-aggregate 30-in. reciprocating plate type, or a three-aggregate proportioning feeder consisting of a 20-cu. yd. steel bin with three compartments and three adjustable gates. The proportioning feeder is a 38-in. by five ft continuous apron type and is mounted on a two-axle, pneumatic-tired truck. All feeders are driven from the tail shaft of the cold conveyor. The entire plant is electric motor driven, with individual motors for each functioning unit. Motors are all of the enclosed, high-torque, fan cooled-type and are controlled from two push button stations, one on the mixer platform and another at the base of the drier.

Total horsepower required to operate the plant is about 150. Weight of the mixer unit is approximately 32,500 lbs; that of the drier-dust collector unit is about 49,000 lbs.

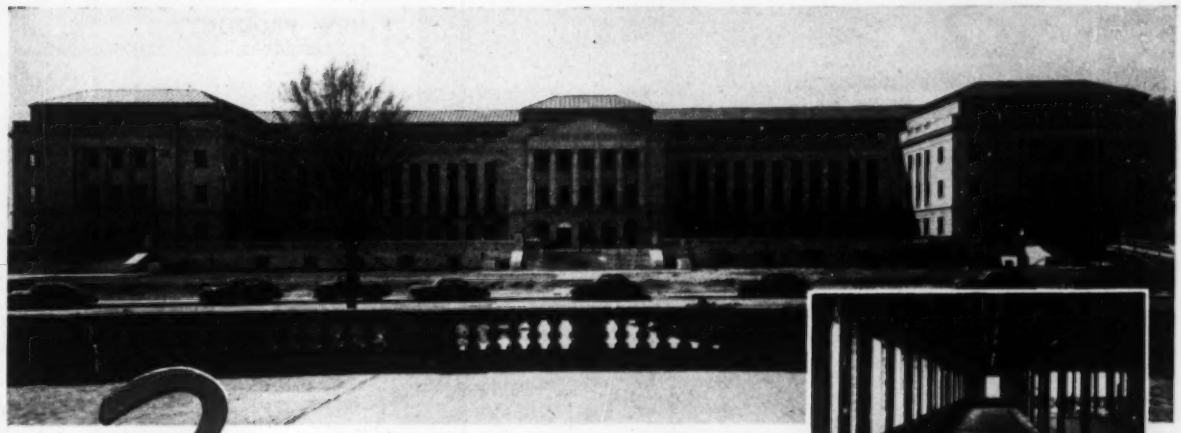
Either a steam atomizing or an air atomizing burner is available. Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13, Minn.

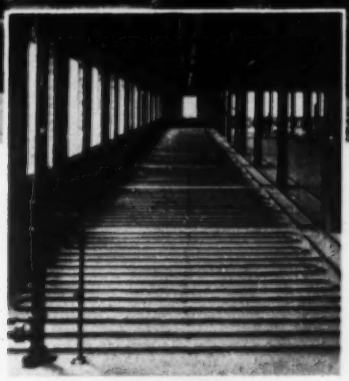
Building blocks imitate random ashlar texture

Concrete building blocks with random ashlar texture are being produced for use in patio walls or as decorative facing for buildings.

Rubber molds are made from actual stone setups. This mold is then used to cast the finished block employing thin layers of colored cement to vary

ENDS ARE LAPPED for custom look.





2 more BIG RADIANT HEATING INSTALLATIONS

select the time-proved protection of

BYERS WROUGHT IRON PIPE

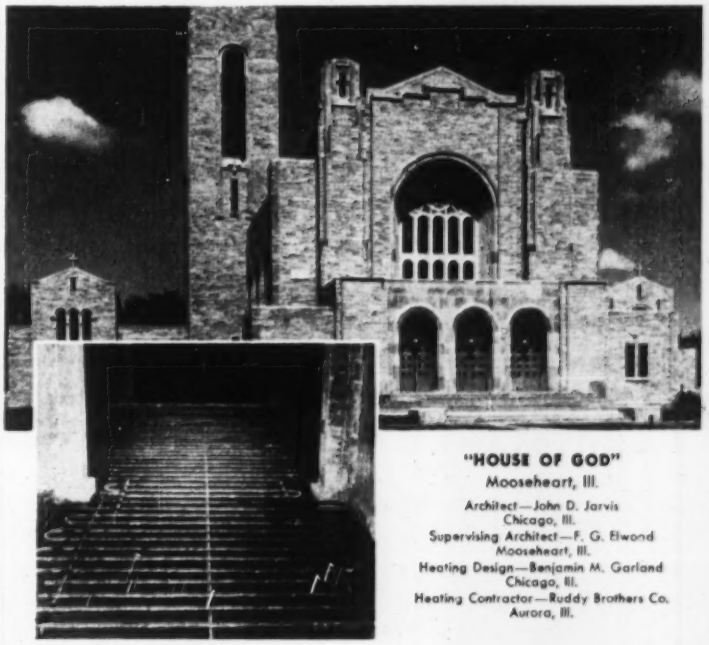
COMMONWEALTH OF KENTUCKY
CAPITOL ANNEX, Frankfort, Ky.
Architects—Meriwether, Marye & Associates
Lexington, Ky.
Engineers—Procter-Ingels Engineers Associated
Lexington, Ky.
Heating Contractor—B. A. Walterman
Cincinnati, Ohio

The established and continued acceptance of Byers Wrought Iron pipe for radiant heating systems is supported by thousands of past successful applications, and is constantly being confirmed by the growing number of current installations.

The two radiant heating installations covered here are typical of the confidence today's leading engineers hold for this time-proved material. In the Commonwealth of Kentucky's new $6 million Capitol Annex more than 24 miles of Byers Wrought Iron pipe was installed to safeguard the largest radiant heating system in a public building. And in "House of God," one of the largest radiant heated churches in the country, nearly 7 miles of 1½-inch Byers Wrought Iron pipe was laid in the church floor, steps and altars to provide the desired durability.

Write today for our bulletin, BYERS WROUGHT IRON FOR RADIANT HEATING.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.



"HOUSE OF GOD"
Mooseheart, Ill.
Architect—John D. Jarvis
Chicago, Ill.
Supervising Architect—F. G. Elwood
Mooseheart, Ill.
Heating Design—Benjamin M. Garland
Chicago, Ill.
Heating Contractor—Ruddy Brothers Co.
Aurora, Ill.

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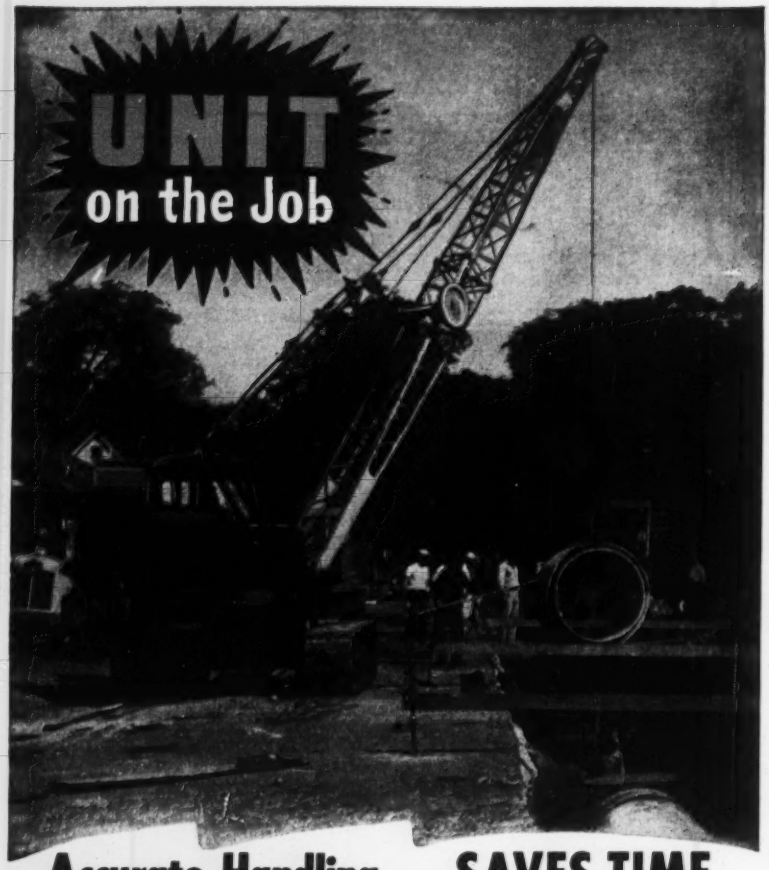
ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS



Accurate Handling... SAVES TIME

This sturdy UNIT Crawler Crane offers plenty of power plus accurate control. Spots heavy sewer pipe perfectly into the desired position. Adjustable Hook Rollers, Extra Long Crawlers and Wide Multiple Hinged Crawler Shoes provide all-around stability. Full Circle Swing, controlled from within UNIT'S FULL VISION CAB, provides safe and efficient operation. The operator has a complete view of the entire job at all times. GET THE FACTS! Investigate this modern UNIT and its many features. Write today for literature.

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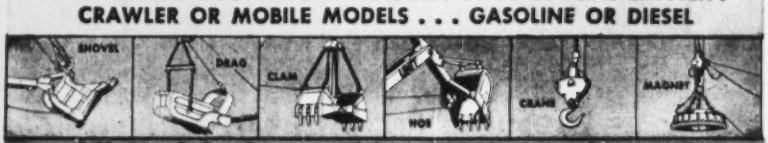
CRAWLER OR MOBILE MODELS . . . GASOLINE OR DIESEL



All Models Convertible to ALL Attachments!

the pattern. Colors used are metallic oxides with good weathering qualities.

The finished product is 7½ in. high, 3½ in. thick and from 12 to 36 in. long, available in multiples of 4 in. Ends are lapped so the finished wall keys together to give a look of individual stones laid by a mason.

Production is currently limited to one plant in Phoenix, Ariz., but the company plans to establish producers in various parts of the country. GRAND CANYON CAST STONE CO., PHOENIX, ARIZ.

Self-contained spraying rig for curing compound

A portable spraying rig has been designed for the application of membrane curing compounds on large areas of concrete. The spraying method is considered faster than brooming or mopping and gives a more even distribution than those methods.

The spray unit consists of a three-wheeled carrying frame, a 1½-hp gasoline engine, pump, hoses and nozzle. A 55-gal. drum containing curing compound is set on the frame and used as a reservoir.

A metering valve controls the amount of material going through the ¾-in. hose to the nozzle, and a by-pass system returns unused material to the drum to keep the compound agitated. Maximum output rate is six gpm.

The entire unit, including a 55-lb drum of compound, weighs approximately 735 lb. FLEXIBLE ROAD JOINT MACHINERY CO., WARREN, OHIO.

Two guns better than one for faster steam cleaning

Keeping construction machinery free of dirt and grime can lead to considerable savings in maintenance and down-time, but the cleaning process itself can be so time-consuming as to cancel out any advantages that might be gained. To cut this cleaning time a new two-gun steam cleaner has been developed.

With a capacity of 200 gph of combined saturated steam and detergent, this new king-sized steam cleaner is large enough to operate two steam-guns simultaneously.

The cleaning spray is delivered in a 130-psi blast that the manufacturer says quickly cuts off dirt, grease or other objectionable matter. Steam generation—starting with cold water—takes only two minutes. Operation of the cleaner is simplified with two electrical switches, the only controls.

The machine, designated model

QSA, is 59 in. high, 57 in. long, 30 in. wide and weighs 1,050 lb. It is available either as a stationary or portable unit. QUICK CHARGE, INC., 1750 N.E. 10TH ST., OKLAHOMA CITY, OKLA.

Adjustable protractor has built-in magnifier

A new adjustable protractor will form or measure with considerable accuracy any angle from zero to 180 deg. without moving the instrument out of position.

Working on a hinge principle the base arm of the protractor is positioned and the upper arm is swung to the desired angle and locked with a thumb screw. A magnifier, which is built in over the registration, aids in accurate adjustment. The 180-deg. arc is calibrated in one and five deg. divisions.

Folded to the zero deg. position the protractor measures two by seven in. and may therefore be easily carried in a pocket. The lower arm is also a five-in. rule. WAY-MAC MFG. CO., 8112 MELROSE AVE., LOS ANGELES 46, CAL.

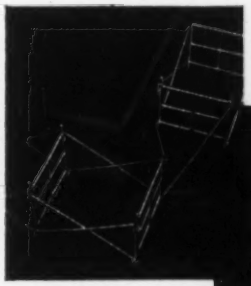
Asphalt mixer prepares up to ten tons per hour

The HTD-B Multi-pug asphalt mixer is a portable unit capable of preparing up to ten tons an hour of cold asphaltic mixtures, and reactivating and heating an equal amount of stock pile mixture. Capacity for preparing hot asphaltic mixtures is five tons an hour.

In addition, the mixer can be used to dry various types of wet aggregates and remove both moisture and solvents from bituminous mixtures. According to the manufacturer the equipment can also be used to process tars, paving asphalts, cut-back asphalts and emulsified asphalt. K. E. MCCONNAUGHAY, LAFAYETTE, IND.

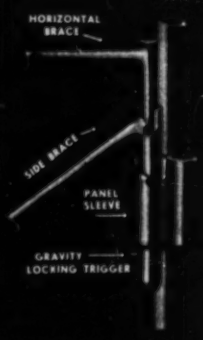
TEN TONS of mixture can be prepared.

SCAFFOLDING TRICKS
planned the easy way with
UNIVERSAL
Ezebilt

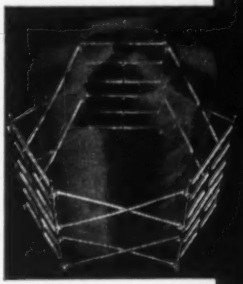


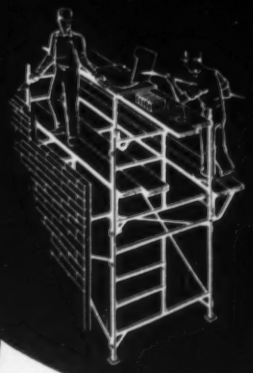
"Up Faster-
no bolts to master"
with GRAVITY-LOCK

No loose parts—ends of braces with locking triggers are zinc-plated, slip easily into locking sleeves on the panel legs. Finger-tip action releases the rust-proof locking trigger for easy disassembly.



TYING-AROUND CORNERS
Swivel action and diagonal cross-bracing permits the use of braces to "tie-in" when making a 90° turn.





ALL MASON WORK
Simplified with Ezebilt SU type panels to provide open passageway thru the lifts. Four plank bearing levels available with use of side brackets.

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Ezebilt's swivel action sleeve-lock makes it easy to scaffold round stacks and various cylindrical structures.

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with UNIVERSAL SCAFFOLDING

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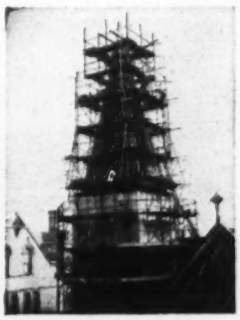
CALL on Universal's layout and planning service to help you build *better* scaffolding *faster*—and at lowest possible cost.

ADAPT standard Ezebilt steel panels to do many other jobs—such as SHORING concrete forms.

COMBINE standard Ezebilt panels with Universal Endlok pipe-and-clamp to scaffold steeples and structures of irregular shape.

PROVIDE work platforms where they're needed—at safe, efficient operating levels.



Universal's NEW Ladscaf — ladder-type scaffold now available. Light-weight, low-cost, it is designed specifically for speeding-up Maintenance, Painting and Decorating work. Write for Bulletin E-6A.

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American Tubular Elevating Towers
World's Largest Producer of Steel-Panel Scaffolding.
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80 to 200
tons per hour!

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AURORA, ILLINOIS, U.S.A.

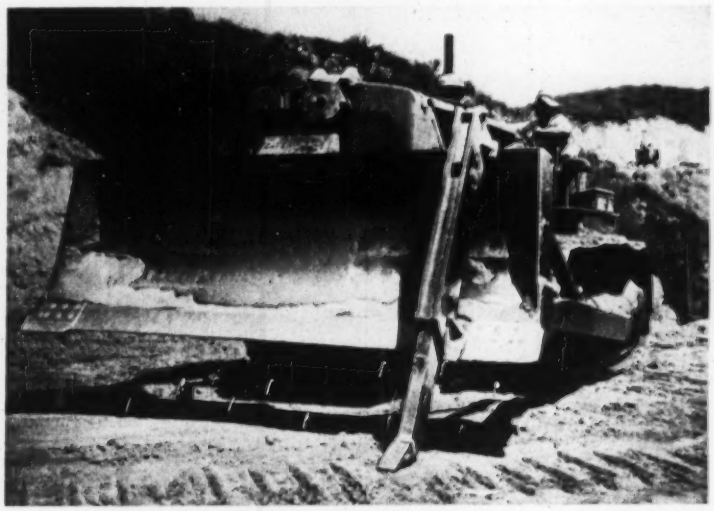
Detector has interchangeable heads

If you've been using a divining rod for finding buried or hidden pipes, conduits, bench marks or steel structural members, you can sell your supply of hazel forks. Electronic Applications has developed a metal detector that should give more reliable results.

The Model 100 detector is a sensitive, portable instrument capable of locating metallic and magnetic objects imbedded in non-metallic materials such as concrete, wood, soil, masonry, salt and fresh water and also in the various plastics.

Three different interchangeable search heads distinguish this detector from others of the same type. The three heads provide the basic instrument with performance equivalent to small object, large object and general purpose detectors.

The detector generates and projects a high frequency electro-magnetic field.



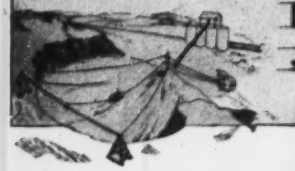
NEW TYPE RIPPER clamps onto the front of Caterpillar 8S and 7S bulldozers and can be adjusted to rip to depths of 22, 15 or 8 in. or can be fully retracted. Either one or two rippers can be mounted to the same blade. The entire unit weighs approximately 650 lb. Preco Inc., 6300 E. Slauson Ave.; Los Angeles 22, Calif.

Broadview Apartments, Baltimore—This attractive new apartment building, located only a block from Johns Hopkins University, is 17 stories high, and has facilities for 465 families. It is equipped with penthouse apartments, and also has a 2-level basement garage, with space for 150 cars. Broadview Apartments is faced with rose-range brick, trimmed with Indiana limestone. Its steel framework, consisting of 1800 tons of Bethlehem Structural Shapes, is of welded construction.

Owner: Broadview Apartments Co.; *Builder:* John K. Ruff, Inc.; *Architects:* Palmer, Fisher, Williams & Nes; *Structural Engineer:* Van Rensselaer P. Saxe; *Steel Fabricator and Erector:* Vulcan Rail and Construction Co.—all of Baltimore.

BETHLEHEM STEEL

ONE MAN CONTROL
DIGGING • HAULING
AUTOMATIC DUMPING



You can cut handling costs by using a

SAUERMAN SCRAPER

Here's How—Sauerman Scrapers move sand and gravel, ore, crushed stone, coal and other bulk material rapidly . . . . Normal operating speeds using a Sauerman Hoist are 250 fpm. on the inhaul with loaded bucket and 500 fpm. on the outhaul with empty bucket.

Its versatile working range enables you to work a small area or reach out 1,000 feet or more. Sauerman Scrapers travel across a river or wide stockpile, up to the top of a hill or down into a deep pit.

Initial investment is moderate and maintenance costs are low, since only the most expendable parts of the Sauerman Scraper contact the material with which it is working. The bottomless scraper bucket is designed for maximum strength with minimum weight. The result is economy in power consumption, gasoline, diesel or electric.

Add to these advantages, the labor costs of just one man—situated in a safe location overlooking the work site—controlling the entire job operation . . . and you obtain an efficient, economical installation. Sauerman Scrapers range in size from 1/3 to 15 cubic yards. Write for Catalog A: Power Drag Scrapers or Catalog E: Bulk Storage By Power Scraper.

SAUERMAN BROS., Inc.
532 S. Clinton St., Chicago 7, Ill.

SAUERMAN BROS., Inc.
Earthmoving Equipment Since 1909

"Gunite" . . . . . the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
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GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"

NEW PRODUCTS

A portion of the energy in this field is converted by the equipment circuitry to a constant pitch tone in the headset. A metallic or magnetic object within the developed field sets up a distortion in the field that in turn causes a change in the pitch of the tone in the headset. Metallic objects change the pitch in one direction and magnetic objects cause it to change in the other direction—thereby providing a positive means of distinguishing between them.

Distances at which the detector is effective vary with the size and material composition of the hidden object, but the equipment is effective for locating 1-in. iron pipe approximately one foot below soil surface. Larger objects can be located at greater depths when the instrument is fitted with the large object search head. ELECTRONIC APPLICATIONS, P. O. Box 4975, CLEVELAND PARK STA., WASHINGTON 8, D. C.

New Products briefs . . .

• **New dump body**—The Morgantown, a new 20-ton capacity tandem axle straight bed dump body is announced by The Galion Allsteel Body Company, Galion, Ohio. Constructed of 10-gage steel and with a full size cab protector, the body is 20 ft long, overall, 84 in. wide at the floor level and 95½ in. wide at side board level. Ends are 52 in. high with box-type corner posts that anchor two 11-in. removable steel side boards. Body is reinforced by 6 steel V-type braces and has a double-acting tailgate 35 in. high. Dumping is handled by a Galion Model 77353 hoist, consisting of two 7-in. twin ram 3-stage twin telescopic cylinders. Rated hoist capacity is 20 tons.

• **Steel plate selector**—A steel plate size selector is available from Lukens Steel Co., Coatesville, Pa., for the convenience of designers, engineers and others interested in steel fabrication.

The size selector is of the slide-rule type and determines the longest and widest plates obtainable in any desired thickness from Lukens facilities. The reverse side of the selector permits the calculation of weights of rectangular and circular steel plates.

• **Backfill tamper**—A Super Triplex (Model GT-RV-4) augments the standard Triplex backfill tamper line of the Gunderson-Taylor Machinery Co., 988 Cherokee St., Denver, Colo. On-the-job tests reportedly prove the Super Triplex to be 20 to 40 percent faster than the standard model.

PUBLICATIONS

Construction safety—Good housekeeping practices in the construction industry are outlined in a new safety movie. In the 13-minute color films, the recommended housekeeping practices for the building industry are woven around the story of a construction superintendent who overcomes the delays and difficulties of a previous job by instituting a good housekeeping program on his project. Showings may be arranged through the AETNA CASUALTY & SURETY COMPANY, PUBLIC EDUCATION DEPARTMENT, HARTFORD, CONNECTICUT.

Centrifugal pumps – An illustrated booklet describes the action of centrifugal pumps and explains dual-volute priming. A section of the book contains descriptive information on centrifugal pumps available from the Construction Machinery Company. CONSTRUCTION MACHINERY COMPANY, WATERLOO, IOWA.

Explosives—A booklet entitled "Hercomite and Gelamite Explosives", describes the properties of two Hercules explosives. The "Hercomite" series are ammonium nitrate dynamite, and the "Gelamite" series are semi-gelatin designed to replace gelatin or gelatin-extra explosives. HERCULES POWDER COMPANY, WILMINGTON, DELAWARE.

Incandescent lighting – More than thirty different incandescent lighting fixtures are illustrated and described in a new 16-page folio. The units listed are for commercial and institutional interiors. Specifications are included for each unit with candlepower distribution curves and coefficients of utilization. FOLIO NO. 1-53. GRUBER LIGHTING, 125 SOUTH FIRST STREET, BROOKLYN 11, NEW YORK.

Radiant panel heating—Tedious and time-consuming heat loss calculations are reported to be eliminated with a publication entitled "A Simplified Design Procedure for Radiant Panel Heating". Conventional arithmetical computations have been replaced by three sets of tables in which can be found the required panel area in square feet, the approximate heat input of the proposed panel installation in btu per hour, the recommended tube-spacing and tube size, the approximate mean water temperature, total length of tube needed for each panel and the suggested sizes of mains and pumps for the entire system. REVERE COPPER & BRASS, INC., 230 PARK AVE., NEW YORK 17, N. Y.

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EDITORIALS

Collective-bargaining by engineers

FUNDAMENTAL DIFFERENCES of opinion concerning provisions of the Taft-Hartley labor law as that law affects engineers came to light at recent hearings in Washington. The National Society of Professional Engineers wants the National Labor Relations Act amended to permit the so-called "non-bargaining" groups of engineers that have been set up among employees of large corporations to continue to discuss pay and working conditions informally with officers of the employing organization without risk of having either the employer or employees charged with violating the act. The Engineers and Scientists of America, on the other hand, desire that the act be amended to make such informal discussions illegal. It wants all such considerations of pay and working conditions restricted to legally recognized unions.

The ESA is an affiliation of such unions. Its larger and more influential units are made up of engineers employed by the airplane manufacturers (ENR Jan. 15, p. 31), but some are in electrical and mechanical industries and a few in the field of civil engineering. All are independent of the AFL and CIO. Some of them were organized originally to provide engineers and other professional-grade employees with collective-bargaining units free of domination by non-professionals at a time when it appeared probable that engineers and scientists would be forced to join unions unfamiliar with their peculiar problems and unsympathetic to their desire to keep collective bargaining on what they considered to be a professional level.

In the light of this history, it comes as a distinct shock to find the organization with which those bargaining units now are affiliated—the ESA—resorting to the same tactics that made old-line trade unions anathema to most engineers. ESA's president, Joseph Amann, in his statement to the House Committee on Education and Labor, said that the non-bargaining groups had been "established, with employer encouragement, to thwart union organization . . . They have effectively replaced the old-style company-dominated unions." The same things were said by old-line unions about some of the organizations in which the ESA had its start.

The men who set up the non-bargaining groups now under attack by ESA considered the methods of old-line trade unions inconsistent with their professional standards. They wanted an organization through which they could discuss their employment problems with their employers without all the trappings that have become a part of formal collective bargaining—union organizers, shop stewards, threats of strikes, and picket lines. They hold that such an informal contact is more in keeping with their professional position as engineers and helps to maintain the special relationship that engineers, in their opinion, should have with management.

Obviously, the effectiveness of such an informal organization in keeping its members satisfied depends on what attitude the employer takes toward it. As the men making up each unit can abandon it and resort to formal collective bargaining whenever they conclude that management is not meeting them half-way, it seems logical to conclude that the majority of them are reasonably well satisfied. Such being the case, their right to maintain the informal contact should be confirmed by the amendments to the Taft-Hartley Act sponsored by the National Society of Professional Engineers.

Clearer reports needed

NEARLY A CENTURY AGO an ambitious writer started a movement toward simpler English by bringing out a book called "Robinson Crusoe in Words of One Syllable." That movement still is badly needed, if a recent government report on the construction industry can be taken as a guide. The movement's most ardent advocate at the present time is Rudolf Flesch. We commend his book "The Art of Readable Writing" to the authors of "New and Maintenance Construction" recently published by the U. S. Bureau of Labor Statistics as part of its report "Construction in the 1947 Interindustry Relations Study".

The following is quoted from the introduction to the report:

"The very nature of construction requires that it be given special treatment in an interindustry chart. For presentation purposes, in a transaction chart, it is shown as any other endogenous sector with allocations on a current account basis to purchasing sectors (its private maintenance and repair component), as other current allocations to government sectors (both new and maintenance public construction), and as capitalized allocations to the Gross Private Capital Formation sector (all private new construction)."

We realize that this statement may be crystal clear to the makers of statistical charts. But it does not belong in the introduction of a report designed to serve the construction industry because most readers, when they reach that point will say "Oh, oh, this is too deep for me". As a result, the report will not be read.

This report of the Bureau of Labor Statistics is not alone in having this weakness. Similar defects can be found in many engineering reports. The introductions to such reports need special attention. They should be selling talks that tell the reader what he can expect to get out of the report.

A report that is not going to be read is not worth the time spent in preparing it.

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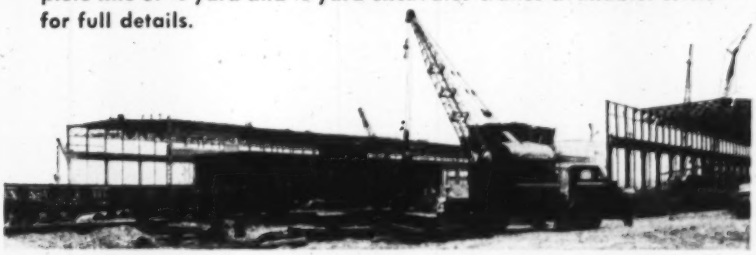

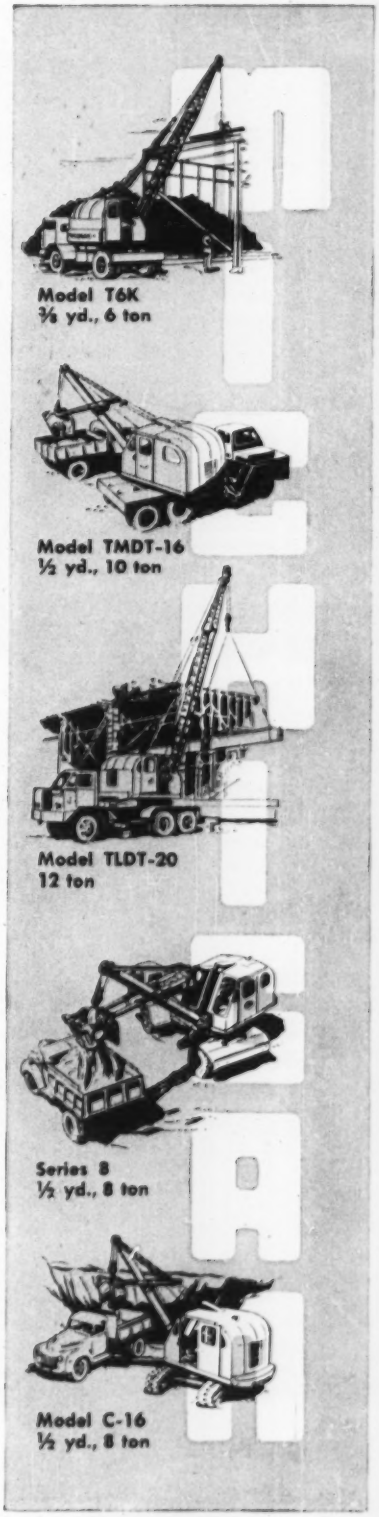

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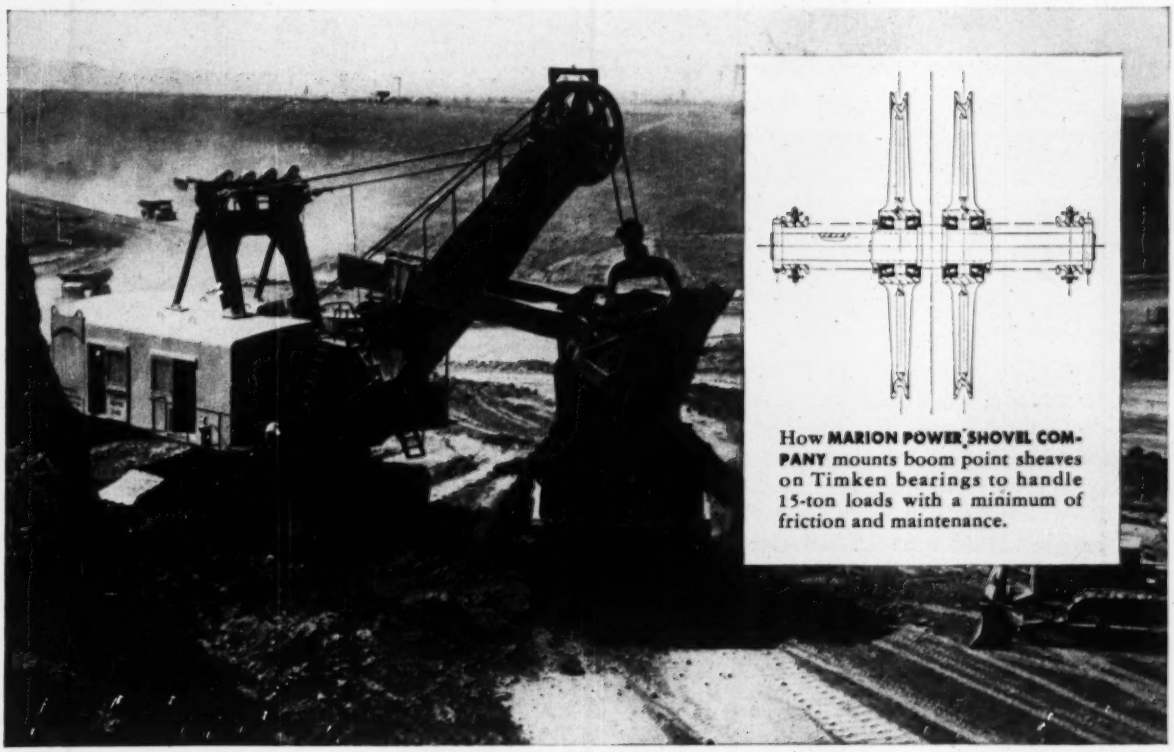
YOU can imagine the stresses involved in digging, swinging and loading 15 tons of earth in as little as 18 seconds. Those stresses are one reason why the boom point sheaves and hoist drum shaft of the huge new Marion 191-M shovel are mounted on Timken® bearings.

These bearings have proved their ability to carry the biggest loads the shovel might conceivably throw on them. On a huge dam excavation project along the Missouri River in South Dakota, one 191-M had to gouge its loads out of solid shale *without benefit of blasting.* But Timken bearings are gluttons for overloads and shock. Line contact between rollers and races gives them great reserve capacity. And case-hardened Timken bearing rollers and races have tough cores that make them virtually shockproof.

The maintenance of 8 separate points on the 191-M has been simplified by the use of 8 Timken bearings. Their extreme precision keeps housing and shaft concentric. This helps keep dust and grit from finding their way into the bearings, by making closures more effective. And since Timken bearings' tapered rollers take thrust as well as radial loads, there are no extra thrust bearings to maintain.

Normally, Timken bearings last the life of the shovel machine in which they're installed. Good reason to specify them on the machines you build or buy. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



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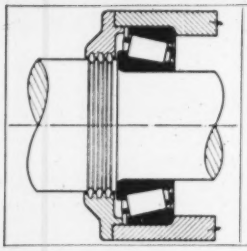

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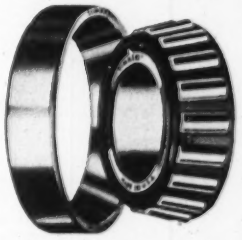

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